# Textile World

APRIL, 1941

## KNITTING ARTS EXHIBITION NUMBER

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# Reading Habits

## *Comments by Henry G. Lord*

The recent death of Fred R. Davis, for many years in charge of advertising for the General Electric Co. and one of my oldest business friends, reminded me that he was the first advertising manager, so far as I know, to endeavor to appraise the value of papers for advertising results, not only by number of copies printed, but by paid circulation, reader interest and the renewal percentage of subscriptions. Long before the Audit Bureau of Circulations and the Associated Business Papers were thought of, with their various yardsticks for advertising values, Fred Davis used a questionnaire which asked the most searching questions pertaining to circulation and editorial data. Many publishers refused to answer, saying that it was an intrusion into their private affairs; others simply didn't know the answers.

There was one question which I thought very much to the point. The question was "What is the potential number of subscribers in your field for a paper like yours?" and "How many of them are paid subscribers to your publication?" and "What percentage of them renew?" When I returned the questionnaire, I wrote Davis that I thought what he was interested in was "readers" and that according to a survey of reading habits made at that time, about one-third of the people did not read *any* books or serious magazines, and that was before radio, too. There were at that time about 15,000 *theoretically* potential subscribers to TEXTILE WORLD, but there were only about 10,000 who were actually potential *subscribing readers* of TEXTILE WORLD or any other publication and of these 10,000, 8,500 subscribed and 65% renewed their subscription. That was pretty good and showed we were doing a good editorial job.

Today TEXTILE WORLD has 12,350 subscribers. There are fewer textile mills than there were 40 years ago, but more potential subscribing readers, due, I think, to the great number of textile-school-trained executives and foremen. TEXTILE WORLD has the largest percentage of its potentials in its history. Textile manufacturing is no longer a rule-of-thumb business as it was in my younger days, but it is a highly skilled and mechanized profession requiring a correspondingly high-grade technical publication like TEXTILE WORLD to serve it.

When I look over that wonderful March Greenville Show Number and this equally fine April Knitting Arts Issue, I realize what a long way the industry has come in 50 years. Many of the older men can remember the first knitting show of the National Association of Hosiery and Underwear Manufacturers held in a store on Chestnut Street, Philadelphia. It didn't have many frills, but it was a good show. That was the beginning of an era of wonderful development in knitting machinery; and there doesn't seem to be any end to it.

No wonder one has to be on guard against obsolescence and not let his reading habits get out of order or he will lose touch with what is going on.

HENRY G. LORD, *founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.*

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# Textile World

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# IN THE NEXT

A feature of the May issue of TEXTILE WORLD will be a pictorial survey of the military theme in current fashions, indicating the many ways in which fabric pattern, color and construction are reflecting the defense program.

Doings at the spring conventions will be reported in these pages, including such meetings as the American Cotton Manufacturers Association at Augusta, the National Association of Hosiery Manufacturers and the Underwear Institute at Philadelphia, and the Alabama Cotton Manufacturers Association at Mobile. Also, of course, coverage of the Knitting Arts Exhibition.

Newest developments in utilization of glass fibers, National Cotton Week, safety methods in the mill, current defense activities, and other timely matters will be covered in the May issue.

* * *

**Index to the 1940 issues of TEXTILE WORLD is now available. The editors will be glad to send a copy of this index to any reader free on request.**

Textile World

# Socks for Soldiers – and for Milady

**WHEN WE WERE** in our early twenties, we met—on a ship going from Piraeus, the port of Athens, to what was then known as Constantinople—a famous international lawyer who was writing, as a hobby, a monograph on the use, and types, of table-cloths over the centuries. It was his contention that such a study could reveal more about the history of civilization than could all the records of wars and dynasties.

We have a hunch that similar research into other uses of textiles would be equally productive. And even if the desire should be to limit the subject to the purely military phases of history, we are confident that a monograph on the changes in soldiers' apparel would reveal dramatically the changes in methods of warfare.

Certainly, as we go over the specifications of the fabrics and garments purchased for the Army and Navy today, we are struck with the difference between them and the corresponding products purchased in the last war, less than a quarter of a century ago.

Possibly in no branch of textiles is this revolution more pronounced than in knitted products. Present specifications for Army underwear. for example, remind this writer not at all of the "issue" stuff he wore in the first World War.

All these changes have demanded of knitters both technical and economic adjustment. They have necessitated closer cooperation between the knitting branch and other divisions of textile manufacture.

But there are civilian, as well as military, interests involved. Socks for soldiers are only a part of the picture. Hosiery for Milady is another part. When the history of the Second World War is written, woman's contribution through self-denial will represent an important chapter.

This phase has not reached our country yet. But it *has* reached Great Britain and Canada, as dispatches in this and previous issues reveal. British women are foregoing silk stockings, in order that England's export balance may be maintained. Eventually this may happen here, just as it may happen in automobiles and other present-day "necessities." However, it is worth while keeping in mind that those mills which produce only consumer goods are also contributing to our national defense, economically. The more we keep going those branches of manufacture which represent national cash income, the more we cushion the devastating effect of non-productive enterprises, such as munition manufacture, which instead of being sources of income are a heavy drag on our economy. A manufacturer of silk hosiery or women's underwear or fancy sweaters is no slacker. He is an important part of the picture.

To the knitting division of the textile industry, we devote the special section which follows. And we congratulate them on the show they will stage in Philadelphia April 21 to 24 inclusive.

TEXTILE WORLD's Guide to Exhibits at the Knitting Arts Exhibition starts on page 161. Our own booth number is 114–117. Come up and see us some time.

Douglas G. Woolf
EDITOR

KNITTING EXHIBITION SECTION

# Hosiery in National Defense

BY EARL CONSTANTINE, *President, National Association of Hosiery Manufacturers*

**WHEN PEOPLE THINK** of defense needs they usually think of airplanes, ships, tanks, guns and other instruments or tools of war. They overlook the fact that all of these have no value without the eye and the hand of the soldier who uses them.

Wars are fought by men and these have to be properly and adequately clothed. The clothing which a soldier wears has a much shorter life than it would have in civilian use because it is subjected to much harder treatment. The civilian of yesterday is the man in uniform of today. Before he donned his uniform he was wearing socks. After he dons his uniform he merely wears more socks in a given period of time. This, and the fact that any army which we may build will represent but a fraction of our man power, mean that the expansion in production in which the hosiery industry must indulge, in order to play its part in the defense program, is of a degree which it should be able to provide without any serious difficulty. Our industry, like many others, has been long over-capacitated, and the larger demands made upon it by defense preparations are merely absorbing equipment which was idle or lengthening the daily activity of other equipment.

Substantial purchases of hosiery have been made by the American Government since the inauguration of its defense program in the summer of 1940. With one exception all invitations for bids have been highly oversubscribed. The exception was an invitation which contained delivery schedules which conflicted with seasonable civilian requirements. When these schedules were changed on our advice, without injury to the Government's needs, the amounts needed were again over-subscribed by the bidders.

**DURING 1940** the hosiery industry delivered to the various services of the Government 1,572,000 dozen pairs (18,864,000 pairs), which was equivalent to 6.6% of the total shipments of the industry of comparable items, namely, men's cotton and wool hose. The cotton shipments were equivalent to 3.6% of the total of such shipments for the year, while the wool shipments represented 23.2% of the total of such shipments for the year.

Expressed in other words, the demands of the Government for wool hosiery constituted more of an added burden to the production of the industry than did the demands for cotton hosiery.

Deliveries of hosiery to the Government during 1941 will be considerably higher than during the year previous. Already the industry is obligated for deliveries in 1941 to a total of 1,284,300 dozen pairs (15,411,600 pairs) of cotton hose, and 2,438,000 dozen pairs (29,256,000 pairs) of wool hose. Future awards undoubtedly will raise the 1941 deliveries substantially.

The sum total of what has been said herein shows that since the defense program was initiated in June 1940 the hosiery industry has delivered 18,864,000 pairs of cotton and wool hose to the Government within 1940, and is now completing additional deliveries for another 44,667,600 pairs, making a grand total of 63,531,600 pairs on the record so far.

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# Underwear in National Defense

BY ROY A. CHENEY, *President, Underwear Institute*

**CAPITALIZING THE EXPERIENCE** of industry during the last World War and immediately following, the Underwear Institute has anticipated the major problems which have confronted our industry to date in the current defense program. One of the most natural inclinations is to expand productive capacity when regular commercial demands are supplemented by defense requirements. Many industries followed that course 25 years ago, only to struggle through subsequent years of destructive competition owing to overcapacity. Wishing to avoid that situation, the main endeavor of the Underwear Institute in setting up a defense program for our industry has been to spread the work and utilize existing marginal capacity. Our objective has been met with gratifying success thus far.

For whatever benefit it may be to others in a similar position or to the distributing trade in knowing the degree of planning behind our production, I am pleased to describe briefly the steps which the Underwear Institute has taken. My first suggestion would be to adopt the proper psychological attitude of serving the Government first and foremost.

Next a strong industry committee is essential. Foreseeing the approach of the present world situation we appointed early a defense committee. We also rebuilt our connections with the buying departments of the Government and secured a mutual feeling of confidence between our industry and the Government.

Our next step was to survey the capacity of our industry in relation to both Government and civilian needs. We made (1) a survey of the machines and the skill in our industry, and (2) a study of the machines and skills demanded by the then existing Government specifications, with the result that certain future bottlenecks showed up immediately.

One of the potential restrictions we found to be in unnecessarily stringent or limited Government specifications for fabric or garment construction. Therefore, to obviate these bottlenecks before they occurred, we worked with the research sections of the Government to revise the Government specifications and redesign our products to the satisfaction of the Government and to utilize existing machines and skills.

The chief remaining problem so far as our industry was concerned was to acquaint new mills with the requirements of manufacturing for Government needs. This was not a simple matter. We advise mills that they are almost certain to lose money on their first contract. To minimize this loss and to make the process as simple as possible, the institute enlisted the cooperation of mills who were experienced with Government work.

**NO MAJOR PROBLEMS** existed in the supply of lightweight underwear to the Government, but to take care of the heavyweight wool underwear needs of the Government, it was necessary for us to build an entirely new industry. Athletic shirts and woven shorts ordered by the Government in 1940 necessitated expanding our production of such items by approximately 15 to 20%, but heavyweight shirt and drawer orders required practically doubling our output. The proportions of Government to civilian business in 1941 appear at present likely to be about the same as in 1940.

There existed only eight or ten mills who knew how to produce and finish heavyweight underwear for the Government so we arranged with the Fuld & Hatch Knitting Co., Cohoes, N. Y.; Munsingwear, Inc., Minneapolis, Minn., P. H. Hanes Knitting Co., Winston-Salem, N. C., Utica Knitting Co., Utica, N. Y., and Appalachian Mills Co., Knoxville, Tenn., to act as schools for the rest of the industry. These mills, in the highest spirit of patriotism, opened their doors to their competitors and have taught other mills how to make Government underwear.

As might be expected, additional problems arose from causes outside our industry. The pressure of emergency conditions soon showed up prospective bottlenecks in the industries supplying us with yarns and wool. So, we turned to the wool and yarn associations, and arranged with Arthur Besse, president, National Association of Wool Manufacturers, Russell T. Fisher, president, National Association of Cotton Manufacturers, Paul Halstead, secretary, Cotton-Textile Institute, Mrs. Mildred G. Barnwell, executive secretary, Southern Combed Yarn Spinners Association, and W. M. McLaurine, secretary-treasurer, American Cotton Manufacturers Association, to help us in the anticipated crises.

A record of acknowledgment would not be complete without mention of the splendid cooperation of General William A. McCain, Commanding Officer of the Philadelphia Quartermaster Depot and his able staff, also of the understanding spirit and helpfulness of General Philip B. Fleming of the Fair Labor Standards Act where learner certificates were necessary or other adjustments were required. A very real aid has been rendered by such men as Frank M. Folsom, W. Ray Bell, Robert Stevens and others associated with national defense purchases.

# Outerwear in National Defense

BY SIDNEY S. KORZENIK, *Executive Secretary, National Knitted Outerwear Association*

**THE PRODUCTIVE ENERGIES** of this nation have been referred to, in a pamphlet by Stuart Chase as one billion wild horses whose strength must be harnessed to the needs of the country. If we may carry the metaphor further, it would be fair to say that so far as harnessing them to the needs of the defense program is concerned, we in the knitted outerwear industry have scarcely done more than place the bit in the horse's mouth. Champing and eager, the horse is ready to go, but as yet the load to be hauled has not been great.

Of course, there have been calls from the defense agencies for a diversity of products from the knitted outerwear industry. But it is felt that only a beginning has been made. There is reason to believe that the volume of the requirements of knitted fabric and outer apparel will increase as the defense program proceeds and as our armed forces swell in number.

The types of articles produced by the knitted outerwear industry that are called for from time to time by the defense procurement offices are more varied than in most other kindred industries. But the volume required in each has not yet reached proportions as substantial. They include knitted watch caps and jerseys for use by the naval forces, cotton "flight-deck" slipover sweaters for use aboard aircraft carriers, headgear for men in the flying service, army mufflers, knitted flying vests, sweaters of several types, including some for nurses, and gloves and mittens. Knitted fabrics, particularly for use in lining garments, have also been purchased.

It is significant, in any attempt to estimate the future volume, that both the naval force and the air force, while they will always remain numerically inferior to the enrollment in the Army, may nevertheless be expected to increase substantially. As more ships are launched and fitted out for services, the apparel needs of the Navy will increase. With the tremendous air training program now under way, the rise in the number of men in aviation will be even more striking. But, of course, the real volume of production must necessarily lie in the products that will be intended for the greatest aggregation of manpower, the regular army. And here, the development of articles of knitted outerwear is still in process. Sweaters for nurses, for men in the tank corps and in the northern posts, as well as in other specialized services, seem fairly well accepted and standard. Further use of knitted sweaters as part of regular infantry equipment, however, is not yet clear.

The industry is giving considerable attention to the development of types of knitwear that may make an important contribution to the apparel equipment of the soldier. Work along these lines was begun by the National Knitted Outerwear Association's Committee on Industrial Mobilization. This group also undertook, in a series of conferences with procurement officials, to study and make recommendations with respect to specifications on the various items of knitted outerwear now in use.

The committee, in recommending revisions of specifications of both the army and navy, was guided by two purposes: to provide specifications that would prescribe the best garments practically possible, and yet of a kind that could engage a major portion of the productive equipment of the industry instead of confining the items to special types of machinery in limited use. It is interesting to note that the committee's recommendations were accepted practically in toto by the authorities in the case of the navy watch cap, the navy jersey as well as in the case of certain army sweaters.

While the contribution of the knitted outerwear industry to the defense program thus seems likely to be diversified, if not immediately substantial, the effect of the defense effort upon the industry will no doubt be vast, particularly if it is to repeat the pattern of development it witnessed during the last World War.

It is well known that during the war years, the knitted outerwear industry received its greatest impetus, and indeed it may be said that it came into its own as a major constituent of the knitting field. In 1914, the total number of sweaters, sweater coats and jerseys produced (exclusive of other types of knitted outerwear) was 2,250,000 dozen. The war so affected the popularity of the sweater than in 1923 the number reached nearly 4,500,000 dozen.

The increase in mass purchasing power during that period must account for much of this expansion. But there were many other factors, too. Whether they will find parallels in the current period is a matter for guesswork. But this much should be clear: that regardless of whether sweaters are purchased in large quantities by the army, they will undoubtedly be used in great quantities by draftees, being suitable for field use. This factor, together with the general increase in economic activity that may be expected to ensue from the defense program, gives us reason to conclude that the defense effort will vastly spur production in the knitted outerwear industry.

# Dyeing of Army Socks

## Data on formulas and methods for producing tan shade with vat colors on cotton hose

By ALBERT H. GRIMSHAW, *Professor of Textile Chemistry and Dyeing, North Carolina State College*

**THAT AN ARMY STILL TRAVELS** on its feet—despite tanks, planes, other mechanized units, and the dictums of Frederick the Great, Napoleon, *et al*—is evidenced by the fact that 21,000,000 pairs of socks were ordered by the Quartermaster Corps between June 30 and Dec. 1 of last year. Of these, 14,000,000 pairs were cotton socks, most of them vat-dyed to a tan shade. One of the problems involved in manufacturing these cotton socks for the Army is the vat dyeing operation. The following discussion of the methods and formulas employed in that operation is based on data furnished by practical dyers and by dye manufacturers.

One of the first mills in the South to start production of vat-dyed cotton socks for Army use was Ragan Knitting Co., Thomasville, N. C. At that time (three or four years ago) it was generally accepted that this particular type of hose could only be run ingrain. That is, the socks were knit from cones of yarn which had been gassed, mercerized, and vat dyed to a tan color. The number of rejections due to streaks and uneven shades in the body of the hose was so great that it was impossible from the standpoint of cost and trouble to continue this method. It was decided, therefore, to attempt to work out a method for dyeing in the piece. After quite a bit of experimenting, and with the aid of some of the dye companies, a satisfactory process was developed.

The method developed at Ragan Knitting Mills is as follows: Fill dyeing machine one-half full of cold water. Add 5 lb. caustic soda. Turn on steam and heat to 190° F. Mix 27 oz. Vat Olive R double powder (C.I.1150) and 13 oz. Vat Brown R double powder (C.I.1151) in 2 gal. hot water and 1% sulphonated castor oil. When this is thoroughly mixed, add to the dyeing machine together with 2% of a fatty alcohol sulphate wetting agent. Add hosiery to machine and run at 190° F. for 15 min. Add 3½% sodium hydrosulphite and run 15 min. Add another 3½% of hydrosulphite and run 10 min. Cool to 140° F. by flushing machine. Pull plug and give two rinses. Refill machine and add 1% sodium perborate and ½% fatty alcohol sulphate at 110° F. Raise temperature to 200° F. and run 10 min. Pull plug, rinse, and soften with a good softener. Extract and finish. Formulas are for a 100-lb. lot.

A slightly different procedure recommended by one authority is as follows: Fill machine with water to low-water level. Add 1% synthetic detergent of the sodium alkylarylsulphonate type, 1% of a wetting agent of the sulpho-dicarboxylic acid-ester type, 1% of a good leveling agent, 33.3 oz. Vat Olive R double powder, 16 oz. Vat Brown R double powder, and 600 grains Vat Red BN double powder (C.I.1162). Bring to 190° F. and run 10 min. Enter dry hose and run 30 min. at 190° F. Do not boil. Bring water level to normal and adjust temperature to 150° F. Add 9% sodium hydrosulphite and run 30 min. at 150° F. Flood with cold water until water is no longer slick with caustic. Make bath with 2% sodium perborate and 2% soap; bring to boil; run 10 min. Give two warm rinses after soaping. Formulas are for a 100-lb. lot.

A third procedure is as follows: Wet out goods in dyeing machine for 30 min. at 200° F. with 1 lb. of a wetting agent of the sodium alkyl-naphthalene-sulphonate type and 8 oz. tetra-sodium pyrophosphate. Drop bath. Refill machine with water and bring to 140° F. Add 2 lb. glue, 2 lb. of a dyeing assistant of the sodium oleyl-sulphate type, 5½ lb. caustic soda, 27 oz. Vat Olive R double powder, 12 oz. Vat Brown R double powder, and 320 grains Vat Red BN double powder. (The dyes are pasted before they are added to the bath). Raise temperature to 190° F. and run 15 min. Add 5 lb. hydrosulphite and run 10 min. Add 2½ lb. hydrosulphite and run 10 min. Add 10 lb. salt; run 5 min.; and drain. Give a cold running rinse until free of caustic. Drain, refill; add 1½ lb. sodium perborate; heat to 180° F.; and run 10 min. Drop bath and finish. Formulas are for a 100-lb. lot. The procedure was developed for rotary machines, but can easily be modified for use with paddle type machines.

Still another procedure is as follows: Boil out hose for 15 min. with 4 lb. of pine oil emulsion. Drop bath. Rinse with hot water. Make up bath with 3 lb. of a wetting agent of the alkylated benzimidazole sulphonate type and 2 lb. of a wetting agent of the alkyl sulphonate type. Bring to boil and add 4 lb. 6 oz. Vat Brown G paste (C.I.1152) 4 lb. 2 oz. Vat Olive R paste, and 10 grams Vat Red BN micro powder. Run 10 min. at boil. Shut off steam and allow bath to cool to 160° F. Add 17 lb. caustic soda and 30 lb. hydrosulphite and run 20 min. Add 20 lb. glauber salt and run 10 min. Drop bath and give a 5-min. rinse with cold water. Treat in fresh bath with 4 lb. sodium perborate for 10 min. at 140° F. Rinse with hot water. Soap at boil for 15 min. with 4 lb. soap. Rinse with hot water and then with cold with addition of 4 lb. of a good softening oil to the last rinse. Note particularly that formulas are for a 225-lb. lot. This procedure was developed for paddle type machines, but can easily be adapted to rotary machines.

**STUDY OF THE PROCEDURES** described above discloses minor differences due to local conditions and individual preferences. The dyes mentioned in the formulas are sold by various companies under their own brand names. All formulas call for use of wetting or penetrating agents of some type in the dyebath. Some mills use rotary machines; others, the paddle type. Concensus is that somewhat better penetration of heels and toes is obtained with rotary machines. Only one of the procedures described calls for scouring of the socks before dyeing. Dyeing temperatures recommended vary from 150 to 190° F. All four formulas specify sodium perborate as the oxidizing agent; but temperatures of the perborate bath vary from 110 to 212° F. With these formulas as a guide, any experienced hosiery dyer should, with a little experimentation, be able to develop a procedure which will produce the most satisfactory results at the minimum cost under the specific conditions in his mill.

Finally, the author wishes to acknowledge his indebtedness to the various mill dyers and the technicians employed by several of the leading dye companies who have furnished data on which this article is based, and particularly to the following: G. R. Stilwell, Ragan Knitting Co.; Samuel L. Hayes, Ciba Co., Inc.; J. D. Sandridge, E. I. du Pont de Nemours & Co.; and Julian T. Chase, National Aniline & Chemical Co.

# Knitted Fabrics for National Defense

Quartermaster Corps. orders socks, underwear, mosquito netting, sweaters, and other knit goods

**A SIGNIFICANT ROLE** in national defense has become the part of the knitting industry. The high rate of output of knitting machines, and the wide variety of products which can be made on available types of machines, have proved to be of invaluable assistance in the current effort adequately to equip the rapidly expanding armed forces of the nation.

A number of the knitted fabrics and socks needed are covered by existing specifications; many others are based on new tentative specifications. Complicating the situation, nearly every bid invitation issued contains exceptions to printed specifications or alternate acceptable constructions.

To assist manufacturers in keeping abreast of current requirements for the various types of knit goods, the balance of this article gives abstracts of specifications with exceptions and alternate requirements where applicable. As only part of the data contained in specifications is reproduced below, prospective bidders should in every case secure complete copies of applicable specifications before bidding.

**VAST QUANTITIES OF SOCKS,** running well into the millions of pairs, have been ordered. Below are given data on specifications of some of the more important types, together with exceptions listed in late bid invitations. Cotton socks are covered by Specification JJ-S-566a in three classes: A, medium weight, bleached, unbleached, or in colors; B, mercerized, bleached, or in colors; C, mercerized, light weight, bleached, or in colors.

*Yarn*—Cotton, not lower than Middling; carded and combed for Classes A, B, and C; mercerized and gassed for classes B and C, except 60/1 yarn used for reinforcing, which shall be mercerized only.

*Construction*—Circular knit, in accordance with accompanying Table. Length of ends: at transfer, approx. 1 in.; at splicing, approx. 1-1½ in.; looping thread, ½-1 in.; heel and toe, approx. 1 in.; transfer ends may be tucked.

*Colors*—Black socks shall be obtained with a diazotized and developed direct dye. Mixed colors shall be obtained with dyed stock mixed with undyed cotton. All colors to have good fastness to washing, crocking, and perspiration. [For solid colors other than black vat dyes are usually specified.] Unbleached socks shall have natural color, neither dyed nor bleached, but thoroughly scoured. White socks shall be fully bleached.

**ALL-WOOL** and wool-cotton mixture socks are also being procured by the millions. Three types are used by the army: Class A, 50% wool, 50% cotton, lightweight; Class B, 100% wool, medium weight; Class C, 75% wool, 25% cotton, heavyweight. The socks are covered by Specification JJ-S-581a; following are data extracted from this specification, together with exceptions listed in late bid invitations.

*Yarns*—Class A, blend of wool not lower than 64s, and cotton, so proportioned that socks contain not less than 50% wool. Wool and cotton to be separately carded and combed before blending. Yarn to be single, spun on either worsted or cotton system. Color: Type I, silver gray obtained by mixing 3-5% natural or fast-dyed black wool with white wool and cotton; Type II, black or colors, as specified.

Class B, 2-ply, worsted yarn spun from wool not lower than 60s in grade; silver-gray color obtained as above.

Class C, blend of wool and cotton so proportioned that finished socks, exclusive of heel and toe, shall contain not over 25% of Middling (or better) cotton; not less than 50% wool not lower than 56s; not over 25% carbonized wool roils, not lower than 56s; silver-gray color obtained as above.

*Construction* — Seamless, circular knit, according to data in accompanying Table. Length of ends: at transfer, approximately 1 in.; looping thread, ½-1 in.; heel and toe, approximately 1 in.; transfer ends may be tucked.

*Finish*—Thorough scouring to remove oils and grease, followed by boarding on drying forms to proper shape and size. Color shall show good fastness to crocking, laundering, and perspiration.

**UNDERSHIRTS AND DRAWERS** are likewise among important procurements. The former are covered by Specification JJ-U-517, and the latter by JJ-D-653. Fabric requirements for both are identical. Flat- and rib-knit types are specified, in heavy and medium weights, knitted from several types of yarn:

Type I. Flat knit.

Class A. Heavyweight. Subtypes: 1, worsted-spun merino yarn; 2, cotton-spun, combed, merino yarn; 3, cotton-spun, carded, merino yarn; 4, woolen-spun merino yarn; 5, two yarns—one worsted, one cotton.

Class B. Medium weight. Subtypes: 6, worsted-spun merino yarns; 7, cotton-spun, combed merino yarns.

Type II. Ribbed knit.

Class C. Heavyweight. Subtypes: 8 through 12, same as 1 through 5.

Class D. Medium weight. Subtypes: 13, 14, same as 6, 7; 15, two yarns—one worsted-spun merino, one combed cotton.

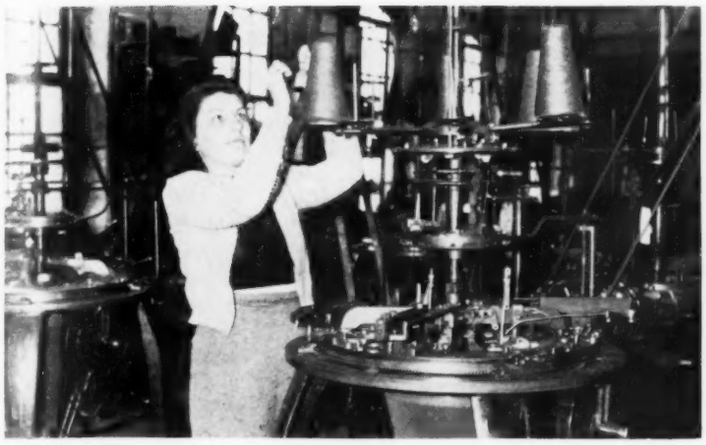
*Yarns*—Single specified, two-ply acceptable, containing wool not lower than 60s, and cotton not lower than Middlings. Silver-gray color of merino and worsted yarns to be obtained by mixing approximately 2½% natural or fast-color-dyed black wool with white wool.

*Fabric*—Finished cloth, not less than 50% wool by weight. In fabric for subtypes 5 and 12, neither cotton nor worsted yarns shall be thrown wholly on face or back. Finished fabric for subtype 15, not less than 36% wool by weight; breaking strength, not less than 45 lb. ribwise; must contain no black wool; worsted yarn must be plaited over cotton yarn.

*Finish* — Cloth thoroughly scoured. Shrinkage in laundering not over 6% either direction, 7% both directions. Minimum wales and courses as per accompanying Table.

**MOSQUITO NETTING** is another "millions-of-yards" item with the Army, and knitted netting has bulked large in procurements to date. Tricot netting is covered by a tentative specification issued July 12, 1940, together with later exceptions which are included in the following digest:

*Yarn*—Single cotton, carded or



Knitting Army sweaters at Gilmar Knitting Mills, Philadelphia

combed, of suitable count and twist. [Although not specified, yarns ranging from 55/1 to 60/1 have been found to yield satisfactory fabric.]

*Color*—Natural color of unbleached cotton, clean, free from oil stains.

*Knitting* — Warp knit on two-bar tricot machine, of approximately 28 gage, with hexagonal meshes. [Although not specified, satisfactory cloth is produced through use of a 28-gage machine, threaded 1 in, 1 out.]

*Physical Requirements* — Finished width, 35 and 81 in., as specified; wgt. per sq.yd., minimum, 1.5 oz.; meshes per sq.in., 190-220; breaking strength, minimum, 16 lb. lengthwise, 10 lb. widthwise; shrinkage, maximum, 8% in length, 16% in width.

Finish—Sized. [Although not specified, a thorough scouring and tentering are recommended.]

**SWEATERS** are also needed by the thousands by the Army. A tentative specification was adopted by the Q. M. on Oct. 11, 1940. Following is an abstract of it, together with exceptions which have been part of late bid invitations.

*Yarn*—Two-ply worsted yarn spun from stock not lower than 50s grade.

*Construction*—Turned-in, crew-neck, pullover type, without sleeves; body knitted with three ends of two-ply yarn, either in Jersey stitch, with not less than 6 wales and 10 courses per in.; or half-cardigan stitch with not less than 5 wales and 10 courses per in.

**OTHER KNIT-GOODS** procurements have been for summer undershirts, lining cloth, scarves and mufflers, gloves, wristlets, skirts for jackets, toques, etc. The first two of these have been discussed in earlier issues of TEXTILE WORLD; some of the others will be covered in articles in forthcoming issues.

## UNDERWEAR FABRIC DATA

| Sub-type | *Body fabric* | | *Cuffs (or anklets)* | | Weight per doz. pr., finished |
|---|---|---|---|---|---|
| | Wales per in. | Courses per in. | Wales per in. | Courses per in. | |
| 1 | 14 | 22 | 12 | 24 | 9 oz. |
| 2 | 14 | 22 | 12 | 24 | 9 |
| 3 | 14 | 22 | 12 | 24 | 9 |
| 4 | 12 | 20 | 12 | 24 | 9 |
| 5 | 14 | 22 | 12 | 24 | 9 |
| 6 | 22 | 26 | 17 | 30 | 6 |
| 7 | 22 | 26 | 17 | 30 | 6 |
| 8 | 16 | 22 | 12 | 24 | 9 |
| 9 | 16 | 22 | 12 | 24 | 9 |
| 10 | 16 | 22 | 12 | 24 | 9 |
| 11 | 14 | 20 | 12 | 24 | 9 |
| 12 | 16 | 22 | 12 | 24 | 9 |
| 13 | 24 | 24 | 17 | 30 | 6 |
| 14 | 24 | 24 | 17 | 30 | 6 |
| 15 | 22 | 30 | 17 | 30 | 6 |

## COTTON SOCK DATA

| | *Class A* | *Class B* | *Class C* |
|---|---|---|---|
| Courses per in. (min.) | 26 | 28 | 30 |
| Diameter of machine, in. | 3½ up to size 10½; 3½ or 3¾ size 11 up. | 3½ up to size 10½; 3½ or 3¾ size 11 up. | 3½ up to size 10½; 3½ or 3¾ size 11 up. |
| Needles per machine (min.) | 176 | 200 | 220 |
| Needles for gore of heel and toe (min.) (each side). | 24 | 28 | 30 |
| Yarns (minimum; finer-yarns may be used). | | Tolerance for size, ± 5%: | |
| Heel and toe | 2 ends 24/1 combed. | 1 end 40/2; 1 end 50/2; or 2 ends 45/2, combed. | 2 ends 60/2 combed, mercerized. |
| Leg and foot | Same as heel and toe | 1 end 40/2 combed, merc. | 1 end 60/2 combed, mercerized. |
| Looping yarn | Suitable | Suitable | 2 ends 90/3 merc. |
| Reinforcing: Heel and toe | 1 end 30/1 combed. | ——— | ——— |
| Sole and high splicing | ——— | 1 end 60/1 mercerized. | 1 end 60/1 combed, mercerized. |
| Rib | 2 ends 24/1 combed. | 1 end 36/2 or 30/2 combed, merc. | 1 end 40/2 combed, mercerized. |
| Heel | ——— | High spliced, 1 end 60/1 combed, mercerized. | High spliced 1 end 60/1 combed, mercerized. |
| Sole | ——— | Reinforced 1 end 60/1 combed, mercerized. | Reinforced 1 end 60/1 combed, mercerized. |

## DATA ON WOOL AND PART-WOOL SOCKS

| | *Class A* | | | |
|---|---|---|---|---|
| | *Type I* | *Type II* | *Class B* | *Class C* |
| Courses per in. (min.) | 25 | 25 | 17 | 10 |
| Diameter of machines (in.) | 3½ to 3¾ | 3½ to 3¾ | 3¾ to 4 | 4 to 4¼ |
| Total number of wales (needles) (min.) at widest point | 160 | 160 | 126 | 68 |
| Needles for gore of heel and toe (min.) each side | 24 | 24 | | 10 |
| Yarns: | | | | |
| Body: | | | | |
| Merino | 2 ends | 2 ends | | 2 ends |
| Worsted | | | 2 ends of 2-ply 2/40 | |
| Reinforcing: | | | | |
| Cotton | 1 end 30/1 | 1 end 30/1 | | 1 end 18/1 |
| Worsted | | | 1 end 2/30 | |
| Looping yarn: | | | | |
| Cotton (mercerized) | 3-ply | 3-ply | | |
| Worsted | | | 2-ply | 2-ply |

# Knitting Nylon Hosiery

## Knowledge of yarn properties essential if knitters are to obtain best results

By MILTON M. ABRAMS

**ANNOUNCEMENT OF NYLON** was followed quickly by realization on the part of hosiery knitters that a radically new synthetic fiber had been developed which promised to revolutionize the fine hosiery field. On Oct. 27, 1938, E. I. du Pont de Nemours & Co., announced plans for commercial production of Nylon. On May 15, 1940, Nylon hosiery was first put on sale at retail. Demand was so great that many stores were soon sold out. For the first time in years there had been created an over-demand for women's full-fashioned hosiery retailing at more than $1.15 a pair.

From May 15, 1940, when commercial production of Nylon yarn started, to December, 1940, production was at the rate of 4,000,000 lb. per year. This month production is being stepped up to 8,000,000 lb. a year. In 1942, production is expected to reach 16,000,000 lb. At present 90% of all Nylon yarn goes into hosiery. This 7,200,000 lb. of yarn is sufficient to make approximately 10,750,000 doz. pr. of hosiery. Average monthly production would be about 900,000 doz. Reported production of 2- and 3-thread full-fashioned hosiery in all gages in October, 1940, was 1,620,728 doz. Nylon yarn available to the full-fashioned hosiery industry during the balance of this year should be sufficient to replace practically all the finer gages of 2- and 3-thread hosiery. Production of Nylon in 1942, provided none is diverted to other purposes, should be sufficient to replace silk in all gages of 2- and 3-thread hosiery.

A thorough understanding of certain of the properties of Nylon is essential if best results are to be obtained in the manufacture of full-fashioned hosiery. Among the characteristics of chief interest to knitters are its high tensile strength and elasticity; low absorbency; immunity to moths, fungi, and mildew; resistance to damage by most chemicals used in textile processing; non-flammability, and ability to take a permanent set when subjected to action of steam at high temperatures. The tensile strength, elasticity, and absorbency of Nylon as compared with several other types of yarn are shown graphically in Figs. 1 to 3. The combination of high strength (both dry and wet) and elasticity makes Nylon ideally suited to hosiery manufacture.

At present Nylon hosiery-leg yarn is produced commercially in sizes of 30 and 40 den., single thread. The 30-den. yarn has 10 filaments and 30 turns per inch Z twist. The 40-den. yarn is composed of 13 filaments and has 25 turns per inch Z twist. A 15-den. yarn is now in the experimental stage.

Throwing of leg yarns is carried out by commercial throwsters or in the throwing department of the knitting mill. Proper throwing is important, helping the knitter to secure high production and quality. Producer-thrown yarn for welts, reinforcing, and other special purposes can be obtained directly from Du Pont.

**PRECAUTIONS IN KNITTING.** Before he starts to knit Nylon, the full-fashioned hosiery manufacturer should make certain that all needles and sinkers are in good condition. A needle line or sinker line is more apparent in a Nylon stocking than in one made of silk or rayon. Ordinarily, however, it is not necessary to reneedle or resinker the machine.

When first introduced, Nylon hosiery yarn was extremely harsh, and its effect on needles was disastrous. The protective coating or sizing now employed has overcome this trouble of excessive wear on needles and sinkers. It is frequently stated that Nylon yarn causes more than a normal amount of wear on carrier tubes. In this connection, knitters should not lose sight of the fact that Nylon hosiery is knit single carrier. Since practically all fine silk hosiery is now knit by the 3-carrier method, it is logical to expect more wear per machine hour on the single carrier employed in knitting Nylon, than on each of the three carriers used with silk. If one wished to knit Nylon by the 3-carrier method, there would be no manufacturing difficulties encountered. In that case, wear of the Nylon yarn on the carrier tubes probably would be found to be no greater than if silk yarn were employed for the main thread. In fact, it might be even less, due to the low twist and the evenness of Nylon.

As a precaution, carrier tubes should be examined periodically and changed as often as necessary. The protective coating on the Nylon yarn is softened by cold water, and lukewarm water hastens this process. Since Nylon is run through yarn-moistening troughs above the knitting machines, a deposit rapidly forms on the carrier tubes, needles, and other machine parts coming in contact with the Nylon yarn. This necessitates regular cleaning of these parts which must be done promptly and thoroughly.

**TEMPERATURE AND HUMIDITY** play important roles in the manufacture of Nylon hosiery. The cones of Nylon yarn should be conditioned for several hours in an atmosphere of high relative humidity. It is not necessary to soak the cones, as the sizing material absorbs sufficient moisture. Automatically controlled air-conditioning equipment is of great assistance in knitting Nylon. No standard temperature or relative humidity can be given for best performance of Nylon, because each mill has its own individual problems. In general, however, relative humidities above 50 to 60% should be avoided; excessive humidity will cause the sizing to shed while the Nylon is being run, and the knitter is then in for trouble.

Some mills, successfully running Nylon, favor a higher temperature than for silk; they believe that a temperature of 80 to 85° F. improves the running and knitting properties of Nylon. Several mills have used low-watt electric bulbs to heat the air in the cone boxes (back of the knitting machine heads) with gratifying results. Others advocate use of a hygroscopic material (like calcium chloride) in the cone box to help dry the air. Running of Nylon from dry-pack "cones" has been tried

experimentally for brief periods, but the practice was never completely successful and has been discontinued. The stitch obtained was not so clear as is obtained when the yarn is run through moistening troughs. Special emulsions have been developed for use in the troughs. Some mills have run the Nylon through plain water, but found it necessary to clean their needles, etc., frequently to remove the yarn sizing which is scraped off. Trouble was also encountered from the yarn sticking to the snappers and other machine parts. On the other hand, the special emulsions act as lubricants and permit free and easy passage of the yarn.

Once the knitter becomes accustomed to running the Nylon yarn, and the machine is properly adjusted, production should be equal to that on silk—in fact, it should exceed it. Incidentally, Nylon is being run satisfactorily on machines equipped with automatic welt-turning devices. In spite of the smoothness of the yarn, no serious difficulties have arisen from loops slipping, etc.

Nylon hosiery should be knit with a lower course count than silk hosiery of a similar style, because Nylon stretches more than silk on the machine. Therefore, the draw-off motion must be eased in order to get the proper stitch formation. Otherwise, one would obtain a greatly elongated stitch. Likewise, to avoid distortion, all tension devices, snappers, etc., should be adjusted to compensate for the stretchability of Nylon yarn. Determination of the number of courses per inch necessary to provide the proper amount of lengthwise and sidewise stretchability with various styles of hosiery is a problem which has to be worked out in each individual mill. Two other factors which must be taken into consideration are that Nylon loses only about 5% of its weight during boil-off (as compared with approximately 25% for silk) and that Nylon stockings shrink slightly during finishing.

The sizing forms a protective coating on the yarn and reduces its vulnerability to damage, but it does not completely immunize. (Were it not for the sizing, Nylon could not be run, because raw, uncoated Nylon is extremely susceptible to snags and pulls.) The concensus is that in the gray state Nylon hosiery is more susceptible than silk hosiery to snagging and pulled threads. For this reason, some manufacturers are covering those exposed parts of the knitting machine with which the hosiery may come in contact. Some plants require their employees to wear gloves when handling Nylon hosiery. Numerous other precautions are likewise taken. One manufacturer wraps each dozen bundle in soft muslin as it comes off the legger, rewraps them after each succeeding operation, and finally places them in gray storage completely wrapped up. In another plant, small rectangular baskets of cotton duck are used, with all seams and rough edges on the outside of the basket. The Nylon legs are then laid flat in the basket and carefully protected and cradled. Examining forms are carefully checked for burrs and rough spots, as are looping, seaming, and mending tables. Any rough edge or corner is carefully covered. One plant has covered its looping and seaming tables with aluminum sheeting to insure a snag-proof surface.

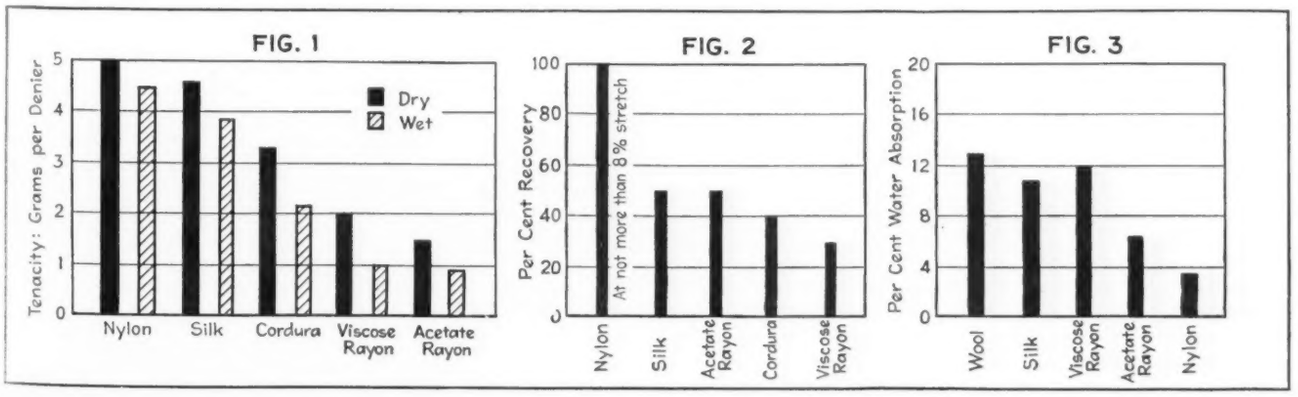
**PREBOARDING AND PRESETTING.** After knitting, Nylon hosiery is subjected to steam under pressure to set the stitch formation and shape and to prevent subsequent creasing or wrinkling. There are two methods commonly employed for this purpose. In one method the stockings are pulled on metal leg forms (similar to regular hosiery drying forms); these forms are then placed in a steam chamber and the stockings subjected to treatment with steam under pressure. This "baking" permanently sets stitch formation and shape. The boarded set is now ready for gray storage or dyeing, dyeing being carried out at a lower temperature than was used for preboarding. Incidentally, it is advisable to do all the mending possible before the preboarding operation, as it is far more difficult to do any mending after the stitches have been set. Care must be taken that the stockings are carefully pulled on the forms, with the seams straight, before preboarding. The size and shape of the board must be given careful consideration, as the wider the board, the greater will be the take-up in length of the hose and the increase in the number of courses per inch. Once the stocking has been preboarded, the stitch formation and shape are practically unalterable.

The other method eliminates the preboarding operation and substitutes a presetting operation. As the gray examiner finishes inspecting the Nylon hose, she hangs them by the toes on needle units. Each unit holds one dozen stockings. A number of these units are then hung on racks and placed in a chamber, which is sealed; controlled water vapor treatment is then applied to the hosiery. The goods are then dried by hot air for a short period of time and removed. This method sets the stitch, but not the shape. Afterward the hose is dyed and then boarded to set the shape. Lower temperatures are employed in presetting than in boarding after dyeing.

Proponents of the presetting method assert that it eliminates one boarding operation, minimizes handling and the resulting danger of pulled threads and snags, and makes mending and removal of oil and grease in scouring easier. Advocates of the preboarding method state that it produces a more even and flatter stitch and fabric, with fewer distorted stitches than will occur if presetting is not properly carried out; and that there is less danger of bleeding of dyes in the final boarding operation.

Nylon hosiery can be dyed with many of the dyes ordinarily used for silk and wool, but acetate dyes are particularly recommended. Several special compounds have been developed for use in finishing Nylon hosiery.

**Fig. 1.** Tensile strength of various fibers: W, wet; D, dry. **Fig. 2.** Comparison of elastic recoveries of various fibers with an imposed load. **Fig. 3.** Water absorption of various fibers at 60% relative humidity



# Five Government Homestead Mills

## Operated by Dexdale Hosiery Mills now producing 400,000 doz. pair fashioned hose annually

**The part played by the Government in connection with the five hosiery mills operated by Dexdale is an extremely controversial one. This article, however, does not concern itself with that controversy. It represents merely an attempt of two staff-editors of *Textile World* to get the facts regarding the financial and operating set-up, for the information of our readers. Those facts are interesting, whether one approves or disapproves of the project itself.—*Editor***

**THE FIVE HOSIERY MILLS** established in 1938 on Government homestead projects have now been in production for a year and a half, and have achieved a total output of 300,000 to 400,000 doz. pair of full-fashioned hosiery. Operated by Dexdale Hosiery Mills, of Lansdale, Pa., the plants represent latest developments in hosiery mill construction and equipment.

The homesteads themselves were started back in 1934 when the Government decided that rehabilitation of marginal farm families was a sound method of rural reconstruction. Agencies were set up in various States, known as rural rehabilitation corporations, to administer relief funds for the work. Result was establishment of a number of "homestead" or "farmstead" projects. Most of these are agricultural projects, although some are adjacent to large cities and therefore more akin to low-cost housing projects. At the more populous resettlement communities, the need for industrial employment to supplement agricultural operations soon became apparent.

Almost at once a number of proposals for starting industrial plants were made to manufacturers in various lines of business, which first resulted in establishment of a clothing factory at the Westmoreland (Pa.) Homestead, and then a woodworking plant at Tigert Valley, W. Va. This was followed by the starting of hosiery mills at the following homesteads: Bankhead Farms, Jasper, Ala.; Cumberland Homesteads, Crossville, Tenn.; Penderlea Homesteads, Burgaw, N. C.; Red House Farms, Eleanor, W. Va.; Skyline Farms, Scottsboro, Ala.

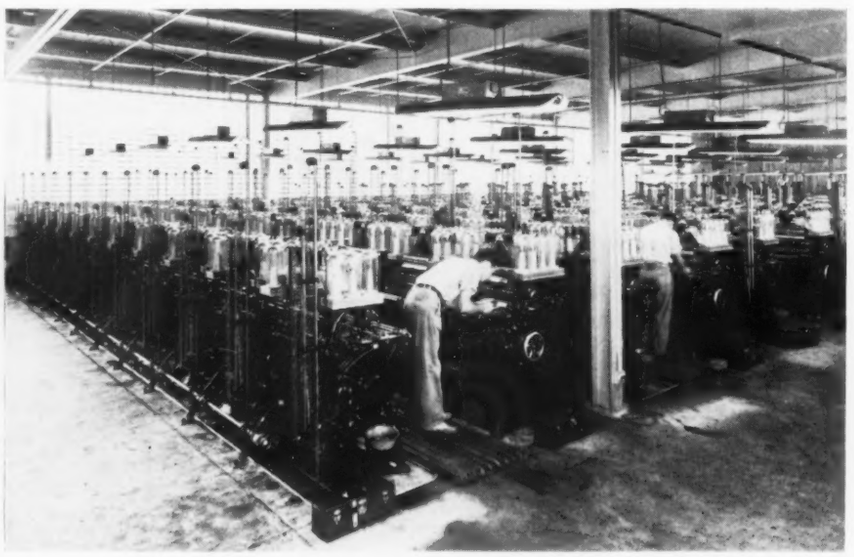
These five communities vary in details but all share the common problem of needing industrial employment to supplement agricultural operation. With the exception of Penderlea, the need for this industrial employment was an accepted part of the picture from the beginning. Later it was found also to be necessary at Penderlea. At Red House, for instance, the average homestead contains less than one acre; at the other projects the tracts are considerably larger although very few are capable of supporting a full-time farming economy. Full-fashioned hosiery manufacture offered comparatively high wages, and the investment per employee was found to be lower than in the case of many other industries, so in 1938 the Government decided to establish a mill on each project to give the people work. An agreement was reached with Dexdale Hosiery Mills to operate the proposed plants.

**DEXDALE WAS SELECTED** to operate these mills, according to the Farm Security Administration, because the company already had an established outlet for its goods and a good reputation for production and merchandising. Further, Dexdale assured the Government that the present Lansdale operations would not be affected, and that addition of these mills would represent normal expansion of the company which would have had to take place somewhere.

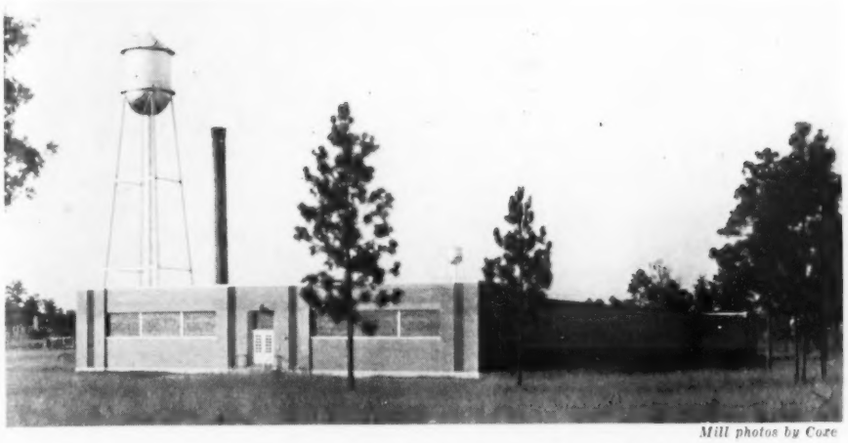
Dexdale at the time needed more plant space and equipment to take advantage of a new attachment it had developed for the Wildman hosiery machine. This patented device, incidentally, used in connection with the Wildman machine, permits the entire stocking to be knitted in one operation, and produces a desirable cup-shaped heel.

Ultimately, Dexdale signed five separate contracts with mills known as Homestead Mfg. Co., Jasper, Ala.; Penderlea Mfg. Co., Burgaw, N. C.; Red House Mfg. Co., Eleanor, W. Va.; Cumberland Mfg. Co., Crossville, Tenn.; Skyline Mfg. Co., Scottsboro, Ala. With the exception of the Homestead plant, which is smaller, all of the mills are 100x300 ft., constructed of brick, steel, and glass block. The buildings, windowless to permit better control of temperature and humidity, can be expanded if desired. Homestead Mfg. Co. is 62x167 ft. and of the same general construction.

In all five plants there are a total of 1,300 of the latest-model, fully automatic Wildman full-fashioned hosiery machines each equipped with the special Dexdale device. Other major equip-



There are 1,300 Wildman single-head full-fashioned machines in operation in all the plants. All are latest model and fully automatic



*Mill photos by Coze*

The mill at Penderlea, eastern North Carolina, is typical of all five plants

ment includes Union Special sewing machines, Carrier central-station air conditioning (except at Jasper where Sturtevant is used), Sipp-Eastwood throwing equipment, Cooper-Hewitt lighting, Southern Textile Machinery Co. loopers, Reading inspection machinery, and General Electric motors.

All of the hosiery machines are 54-gage and finer. Machines of 66 gage are being installed which will be put on Nylon when it is available in sufficient quantities. Some of the 66-gage machines at present are knitting silk, but irregularities of the fiber complicate manufacture on machines of such fine gage.

**FINANCIAL SET-UP** and management of the mills established on Government homesteads are entirely separate from the homesteads proper. Details can best be explained by describing how the mill at Skyline Farms, typical of all the plants, was established.

1. In 1938 an agreement was reached with Dexdale Hosiery Mills for the operation of a silk throwing plant and hosiery mill at Skyline.

2. Homesteaders formed the Skyline Industrial Co., a cooperative association, which borrowed $490,000 from the Government.

3. Out of this fund, the association (Skyline Industrial Co.) spent $139,700 for the purchase of a plant site and the erection of the plant, including all permanent fixtures. The budget calls for a total of $248,000 to be spent for knitting and throwing equipment to be installed at Skyline.

4. Skyline Industrial Co. has title to all the physical property, with the Government investment safeguarded by mortgages.

5. An operating company owned jointly by Skyline Industrial Co. and Dexdale, supervised the construction and is now directing the plant's operations. It has a 45-year lease on the plant and equipment sufficient to cover all payments to the Government, plus all taxes, cost of maintenance, depreciation, and insurance.

6. Skyline Industrial Co. and Dexdale each subscribed to $50,000 of stock in the operating company, Dexdale to own 51% and the industrial association 49%.

7. Dexdale provides management services and markets the entire output of the plant.

8. The operating company, with $100,000 working capital, pays all operating costs.

9. Dexdale receives 51% of the profits of the operating company in return for its services; the Skyline Industrial Co. receives 49% of the profits which are applied on the original loan.

Cooperative industrial associations, similar to Skyline Industrial Co., at each of the projects borrowed a total of nearly $3,000,000 from the Farm Security Administration for the erection and operation of the five different plants. Three of the cooperatives borrowed $750,000 each, of which $670,000 went into plant and equipment and $80,000 was used for working capital. The Bankhead cooperative received $310,000, of which $280,000 went into fixed assets with $30,000 working capital; the Skyline project secured $490,000 of which $440,000 went for plant and equipment with $50,000 as working capital. Interest on these loans is 3% plus amortization charges.

**HOMESTEADERS** and members of their families are given preference in em-

(*Continued on page 73*)

1. House of frame construction at Penderlea

*Photos courtesy Farm Security Administration*

2. Houses at Skyline are well built but not elaborate

3. Rock was used to build the houses at Crossville, Tenn.

# Panel-Rib Knit Fabrics

## Useful charts help prevent mistakes in changing machines from 1×1 to 2×2 ribs

By FREDERICK J. QUILITZSCH

**MANY KNITTING MILLS** have no standard system for setting-up latch-needle rib-body machines for producing panel-rib fabrics. As a result, when machines are changed over from plain-rib to panel-rib fabrics, the fixer may not always take out the same number of needles on a machine of given size and the widths of the panels may vary from those of previous lots. In some plants, in fact, panels produced on the larger machines may actually be smaller than panels made on the smaller machines. To assist the fixer in changing from plain-rib to panel-rib fabrics, the writer has developed the accompanying charts. It is believed that they will simplify settings, save time, and help prevent guesswork and mistakes.

The charts have been so devised as to give about the same proportion of plain-rib and 2 × 2 rib fabric on all sizes of machines covered. This results in a uniformity of appearance in garments of different sizes, and is usually preferable to having 2 × 2 panels of the same width in all sizes of garments.

**11 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 372 | 12 | 56 |
| 12″ | 408 | 13 | 62 |
| 13″ | 444 | 14 | 68 |
| 14″ | 480 | 15 | 74 |
| 15″ | 516 | 16 | 80 |
| 16″ | 552 | 17 | 86 |
| 17″ | 588 | 18 | 92 |
| 18″ | 624 | 19 | 98 |
| 19″ | 660 | 20 | 104 |
| 20″ | 696 | 21 | 110 |
| 21″ | 732 | 22 | 116 |
| 22″ | 768 | 23 | 122 |
| 23″ | 804 | 24 | 128 |
| 24″ | 840 | 25 | 134 |
| 26″ | 900 | 27 | 146 |
| 28″ | 972 | 29 | 155 |

**12 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 420 | 13 | 65 |
| 12″ | 456 | 14 | 71 |
| 13″ | 492 | 15 | 77 |
| 14″ | 528 | 16 | 83 |
| 15″ | 564 | 17 | 89 |
| 16″ | 600 | 18 | 95 |
| 17″ | 648 | 19 | 104 |
| 18″ | 684 | 20 | 110 |
| 19″ | 720 | 21 | 116 |
| 20″ | 756 | 22 | 122 |
| 21″ | 792 | 23 | 128 |
| 22″ | 828 | 24 | 138 |
| 23″ | 864 | 25 | 140 |
| 24″ | 900 | 26 | 146 |
| 26″ | 972 | 28 | 158 |
| 28″ | 1056 | 30 | 173 |

**13 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 444 | 14 | 68 |
| 12″ | 492 | 15 | 77 |
| 13″ | 528 | 16 | 83 |
| 14″ | 576 | 17 | 92 |
| 15″ | 612 | 18 | 98 |
| 16″ | 648 | 19 | 104 |
| 17″ | 696 | 20 | 113 |
| 18″ | 732 | 21 | 119 |
| 19″ | 780 | 22 | 128 |
| 20″ | 816 | 23 | 134 |
| 21″ | 852 | 24 | 140 |
| 22″ | 900 | 25 | 149 |
| 23″ | 936 | 26 | 155 |
| 24″ | 984 | 27 | 164 |
| 26″ | 1056 | 29 | 176 |
| 28″ | 1140 | 31 | 191 |

**14 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 480 | 15 | 74 |
| 12″ | 528 | 16 | 83 |
| 13″ | 576 | 17 | 92 |
| 14″ | 612 | 18 | 98 |
| 15″ | 660 | 19 | 107 |
| 16″ | 708 | 20 | 116 |
| 17″ | 756 | 21 | 125 |
| 18″ | 804 | 22 | 134 |
| 19″ | 852 | 23 | 143 |
| 20″ | 900 | 24 | 152 |
| 21″ | 948 | 25 | 161 |
| 22″ | 996 | 26 | 170 |
| 23″ | 1044 | 27 | 179 |
| 24″ | 1092 | 28 | 188 |
| 26″ | 1140 | 30 | 194 |
| 28″ | 1236 | 32 | 212 |

**15 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 516 | 16 | 80 |
| 12″ | 564 | 17 | 89 |
| 13″ | 612 | 18 | 98 |
| 14″ | 660 | 19 | 107 |
| 15″ | 708 | 20 | 116 |
| 16″ | 756 | 21 | 125 |
| 17″ | 804 | 22 | 134 |
| 18″ | 852 | 23 | 143 |
| 19″ | 900 | 24 | 152 |
| 20″ | 948 | 25 | 161 |
| 21″ | 996 | 26 | 170 |
| 22″ | 1044 | 27 | 179 |
| 23″ | 1092 | 28 | 188 |
| 24″ | 1140 | 29 | 197 |
| 26″ | 1224 | 31 | 212 |
| 28″ | 1320 | 33 | 230 |

**16 Cut**

| *Machine diameter* | *Needles in cylinder* | *Sets of needles for each of 4 panels* 2 x 2 rib | *Needles for each of 4 panels* 1 x 1 rib |
|---|---|---|---|
| 11″ | 552 | 17 | 86 |
| 12″ | 612 | 18 | 98 |
| 13″ | 660 | 19 | 107 |
| 14″ | 708 | 20 | 116 |
| 15″ | 756 | 21 | 125 |
| 16″ | 804 | 22 | 134 |
| 17″ | 852 | 23 | 143 |
| 18″ | 900 | 24 | 152 |
| 19″ | 948 | 25 | 161 |
| 20″ | 1008 | 26 | 173 |
| 21″ | 1056 | 27 | 182 |
| 22″ | 1104 | 28 | 191 |
| 23″ | 1152 | 29 | 200 |
| 24″ | 1200 | 30 | 209 |
| 26″ | 1308 | 32 | 230 |
| 28″ | 1404 | 34 | 268 |

Probably the best way to use the charts in setting up a machine is as follows: Mark or take out a needle as near front center in the cylinder as possible and count over one-half the number of needles needed for a 1 × 1 rib panel; next start taking the needles out for the 2 × 2 panel, making sure the 2 × 2 panel starts and ends with a needle out; when the correct number of sets for the 2 × 2 panel has been made, count over the full number of needles for the next panel of plain rib; continue around the head until the starting point is reached. The charts apply only to 1 × 1 rib fabrics with four panels of 2 × 2 rib. A "set of needles" refers to 2 needles in and 1 needle out.

As each panel both starts and ends with a needle out, there is, of course, 1 additional needle out in each panel.

## Five Government Homestead Mills

(*Continued from page* 71)

ployment. Minimum labor standards are subject to approval of the Dept. of Agriculture. Each mill ultimately will employ an average of 150 persons, or between 650 and 750 workers altogether.

Since none of the homesteaders was skilled in hosiery manufacture at the beginning, training was from scratch. Each community sent six to ten young persons to Lansdale to learn machine fixing and other key jobs, after which they were returned to their respective projects to teach other workers. Most of these young people learned quickly and easily, some being trained in the Wildman Mfg. Co. plant. In this way the mill is gradually building up a supply of skilled workers who eventually will be as competent as any in the industry.

It is expected that eventually all of the houses and lots on the projects will be sold to the occupants, but so far the only place this has been done completely is at Bankhead Farms. There, the residents formed a homestead association which purchased the property from the Government and in turn went into individual contract purchases with each family. A number of the homesteads have been sold to families at Skyline, but elsewhere the families are renting from the Government.

Bankhead Farms, entirely aside from the establishment of the hosiery mill, cost the Government $190,000 for houses and land. There are 100 houses and approximately 2,000 acres of land subdivided into plots of 9 to 25 acres. People occupying these homesteads were selected by a board of local citizens and members of the Farm Security Administration. Many of them at the time had urban employment with an average yearly income of perhaps $4,500—which is a decidedly different situation from the other projects where most of the occupants originally were on relief with incomes averaging $200 annually.

Purchasers of the Bankhead houses were allowed to rent the houses for one year on trial, and after proving themselves desirable tenants were given a purchase contract at 3% interest over a period of 40 years. The individual pieces of property at Bankhead were appraised at an average price of $4,500, but when the property was sold to the present owners the appraisal was cut in half so that the occupants could buy the houses and land for $2,250. Monthly payments, including taxes, insurance and amortization, average $15 for four rooms, $18 for five rooms and $19 for six rooms. A maintenance fund included in the payments is reduced each year if the occupants keep up their property carefully.

Management of the project at Bankhead is supplied by the homestead association, but in all of the other communities supervision is by a community manager hired by the Farm Security Administration.

In contrast to Bankhead Farms, occupied by people of some means, Skyline Farms, the first of the projects, was settled by relief families who cleared the timber from part of 8,000 acres. Gradually, trim one-story frame houses appeared in the wilderness. Each included a cooking range, kitchen sink, cabinet and icebox. Each unit also received a barn, smoke-house, hog house, poultry house, fencing, and orchard.

At the present time, 155 units have been completed with more than 800 persons in residence. Some of these farms are as large as 124 acres. Over $1,000,000 has been spent on this project to date, not counting the cost of the mill, which means that each farm has cost around $6,500 including community buildings, schools, roads, etc. Average annual payment for 32 farms sold amounts to $129.78 per family not including taxes and insurance. Annual cash rentals are $40 to $100 per unit for property which has not as yet been sold by the Government to those who are occupying it.

Emphasis is placed on cooperative activities. Skyline Farms Cooperative Association, with the help of Government financing, operates a store which sells provisions at cost plus 10% operating charges. This organization also markets farm products for members, manages a workshop, blacksmith's shop, canning plant, cotton gin and seedhouse, warehouse, potato-curing house, machine shop and garage.

Whether the Government-sponsored homestead and mill projects are good or bad is beyond the scope of this article. The facts are here for the reader.

Cooperative store at Skyline sells groceries to homesteaders at cost plus 10% operating profit

# Knitted Outerwear

## Producing popular fabrics with drafted patterns or patterns made on machine

By LESLIE MINER

**TWO METHODS** of producing designs in knitted outerwear fabrics made on spring-needle machines are by means of drafted patterns and by means of patterns worked out on the machine by the knitter without drafting. Drafted patterns always should be made on the machine for which they are laid out; a pattern drafted for a coarse-gage machine is reduced in size, and often spoiled, if put on a fine-gage machine. On the other hand, patterns produced by the knitter can be changed from one size of cylinder to another and can be made on almost any gage of machine with little trouble.

Fig. 1 shows a drafted-pattern fabric made on a 28-gage, 1,155-needle machine with a 20-in. cylinder, pattern wheels 120 needles once around, and 6 feeds—3 plain, 3 pattern. Plain-feed yarns are white; pattern-feed yarns are scarlet. Table I shows the feed arrangement.

Each pattern wheel is divided into eight equal parts of 15 needles (see Fig. 2) because it is necessary to set up a pattern that divides evenly into both the number of needles in the cylinder and the number of needles in a wheel. Thus, fifteen is the number of needles in the pattern field.

Fig. 3 shows the pattern draft. Blank squares indicate ins or needles which knit; dots represent outs or needles which float. Each 15-needle section of each pattern wheel knits one course; as there are three wheels with 8 sections to the wheel, the pattern will cover 24 courses. The large numbers at the right, 1 to 8, represent the divisions of the wheels; the small numbers, 1 to 3, repeated eight times represent the wheels. Thus, the second horizontal line from the top of the draft is the first section of the second wheel, the sixth horizontal line is the second section of wheel No. 1, etc.

When blocking the wheels, the ins or outs on the ends should be added together when they so occur that they come together in the repeat of the pattern. For example, on wheel No. 1 (see Table I) the 3 ins on the end of part 1 added to the 7 ins at the beginning of part 2 equal 10 ins.

When blocking the wheels, there should be some mark to indicate a starting point; when reading the pattern or blocking the wheels, care must be exercised to avoid mistakes. If one block too many or too few is placed in the wheel, or if the wheel is started incorrectly, there will be a mistake in the pattern. The best way to avoid mistakes of this nature is either to break or to bend a needle in the cylinder, then turn the machine so this needle is at the starting point of No. 1 wheel. Set wheel 1 and turn the machine to the starting point of wheel 2; likewise for wheel 3.

When making patterns, the knitter must make his own adjustments in order to get a clear stitch. Different yarn types require different stitches.

Fig. 4 illustrates a fabric, the design of which was not drafted. The fabric was made on a 28-gage, 1,152-needle machine with a 20-in. cylinder, pattern wheels 120 needles once around, and 4 feeds—1 plain, 3 pattern. Plain-feed yarn is blue, pattern-feed yarn is scarlet. Table 2 shows the feed arrangement.

The pattern was made by blocking the wheels 3 in, 1 out, which makes the design repeat on 4 needles. The number four divides evenly into both 120 and 1,152, which makes the pattern run vertically in the fabric. If four did not go evenly into 1,152, the pattern lines would be diagonals.

A pattern, such as shown in Fig. 4, can be made on almost any machine, because most cylinders are divisible by four. As the wheels should be set on a certain needle in setting up the machine to make the pattern, it is advisable to set them on the 1-out needle.

**TABLE 1. Arrangement of feeds for fabric in Fig. 1**

No. 1 feed: plain.
No. 2 feed: pattern, using No. 1 wheel blocked as follows:
Part 1—4 in, 3 out, 2 in, 3 out, 3 in
Part 2—7 in, 2 out, 6 in
Part 3—3 out, 9 in, 3 out
Part 4—3 in, 3 out, 3 in, 3 out, 3 in
Part 5—1 in, 3 out, 7 in, 3 out, 1 in
Part 6—1 out, 13 in, 1 out
Part 7—5 in, 3 out, 1 in, 2 out, 4 in
Part 8—2 in, 3 out, 6 in, 3 out, 1 in
No. 3 feed: plain.
No. 4 feed: pattern, using No. 2 wheel blocked as follows:
Part 1—3 in, 3 out, 4 in, 3 out, 2 in
Part 2—6 in, 4 out, 5 in
Part 3—2 out, 11 in, 2 out
Part 4—2 in, 3 out, 5 in, 3 out, 2 in
Part 5—2 in, 3 out, 5 in, 3 out, 2 in
Part 6—2 out, 11 in, 2 out
Part 7—6 in, 4 out, 5 in
Part 8—3 in, 3 out, 4 in, 3 out, 2 in
No. 5 feed: plain.
No. 6 feed: pattern, using No. 3 wheel blocked as follows:
Part 1—2 in, 3 out, 6 in, 3 out, 1 in
Part 2—5 in, 3 out, 1 in, 2 out, 4 in
Part 3—1 out, 13 in, 1 out
Part 4—1 in, 3 out, 7 in, 3 out, 1 in
Part 5—4 in, 2 out, 3 in, 2 out, 4 in
Part 6—3 out, 9 in, 3 out
Part 7—7 in, 2 out, 6 in
Part 8—4 in, 3 out, 2 in, 3 out, 3 in

**TABLE 2. Arrangement of feeds for fabric in Fig. 4**

No. 1 feed: plain.
No. 2 feed, No. 3 feed, and No. 4 feed: pattern, with wheels blocked 3 in, 1 out

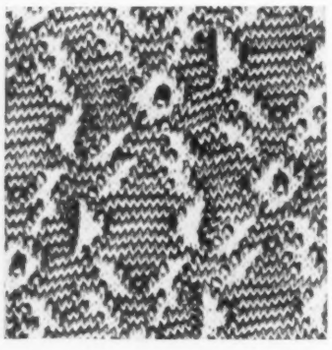


Fig. 1. Drafted-pattern fabric

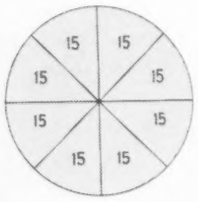



Fig. 2. The pattern wheel

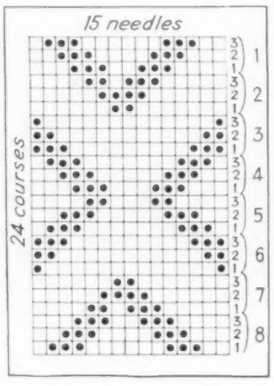



Fig. 3. Pattern field for fabric in Fig. 1

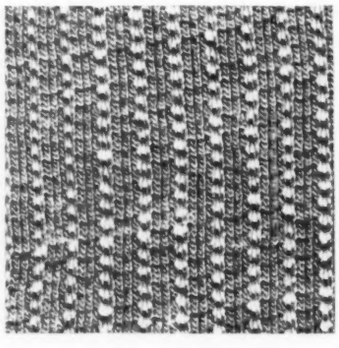


Fig. 4. Design produced by knitter

# Fixing Hosiery Machines

## FULL-FASHIONED MACHINES—Chapter VIII

## (Continued) The Catchbar

By WALTER A. SIMOND

**THREAD PASSING.** The following quotation from the January 1934 issue of the *Reading Record* will aid one clearly to understand the requirements for thread passing: "The sketches (Fig. F15), used to show the formation of the selvage loops are greatly exaggerated, necessarily so on account of the extremely short distance between sinkers and dividers. The sinkers and dividers are drawn to scale, but the distance between them is approximately 100 times the actual distance. Fig. F15a shows the beginning of the selvage formation. Coulier-ing and dividing have been finished with the carrier stopped over the last divider, 1. Thus it will be noted that the last loop is formed by sinker 2 and divider 3 moving forward and kinking the yarn around needle 4. The sharp angle that the yarn takes from the throat of sinker 2 to the carrier tube prevents needle 5 from catching the yarn under its beard as it goes down, the new loops are then pulled through the old ones, the needles returned to their highest position, and another course of yarn is laid. As the yarn is slid across the nibs of the sinkers and dividers, the sinkers are slurred forward, sinking the yarn between alternate needles; and at the end of coulieriing the knitting head is in the position shown in Fig. F15b. There the yarn is wrapped around needle 4 and carried up over the nib of the selvage divider 3. Now when the dividers are brought forward by the catchbar, the yarn, instead of sliding up on the throat *A* of divider 3, is carried under the auxiliary nib, *B*, as shown in Fig. 15c. Thus less yarn is drawn by divider 3 than would have ordinarily been drawn. Therefore, the last loop is pulled slightly tighter than the inner loops and consequently a tight selvage is formed. There is a tendency for needle 4 to rob a slight amount of yarn from needle 6 in forming the last loop and, as a result, the last two loops are likely to be tighter.

"Since the carrier must be set slightly lower than the top edge of the sinkers, and since it is always stopped over a divider in order that the preceding divider might be used in forming the selvage, the dividers are made with their front part slightly lower than the sinkers. This lower setting of the carriers prevents the yarn from being thrown over the throat of sinker 2 (Fig. F15a) at any time, and in this way preventing the loss of a loop and thus preventing a rough selvage."

To avoid the possibility of the yarn being caught by the upper point of divider 1, which lies under the carrier tube in Fig. F15a, the carrier tube must not have too large a bore or be set too low. This would cause an extra loop to be drawn by needle 5. Such extra loops give the selvage a rough appearance and often cause the selvage stitch to be cast off. This trouble is more likely to be found on short-needle machines, because the yarn does not take so sharp an angle as it leads up from the throat of sinker 2 to the carrier tube.

**THE THREAD PASSING POSITION.** in the selvage cycle, should not be set until after the block-gage distance between the cam circles and press-cam rollers has been checked, since the amount of press varies the position of the needle at this point in the selvage cycle. The second key position, thread passing, is where the hook of the selvage needle passes the thread when the needles rise after clearing a course. The right relation is to have the back of the needle hook just meet the back of the sinker throat when the center of the hook and the throat are at the same level, as shown in Fig. F16.

In modern machines there are movable bits in the cams, which can be used to obtain this required position exactly. In older machines there are no bits in the cams for the thread-passing position, and Textile Machine Works recommends advancing or retarding the presser cams slightly to obtain the correct relation at this point in the knitting cycle. When it is necessary to make the above readjustment, the needle-rocking (press cams) should be located first; and then slight changes made in the bits in the needle and needle-rocking cams. The best procedure is to adjust the cam bits as little as possible in order to have a smooth cam contour and avoid any bumping of the cam rollers.

If the needle hooks are too far toward the press edge of the sinker heads, an extra needle may pass inside of the yarn to cause a loop on the selvage; if the hooks are too far in the opposite direction, the selvage needle will pass outside of the yarn and the selvage stitch will cast off when the needles descend. Much selvage trou-

*Textile Machine Works*

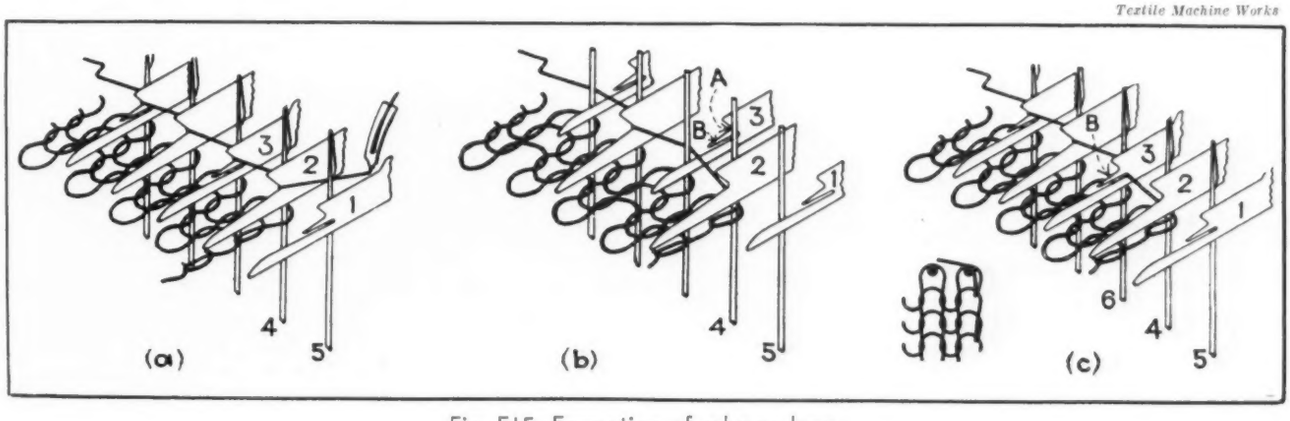



Fig. F15. Formation of selvage loop

ble is caused by the needles rising too far out, since the wear of the cams carries the needles and sinker throats apart at the thread-passing position. Periodic checking of a head for the above positions and the maintenance of machine alignment makes for better selvages.

According to the January, 1934, issue of the *Reading Record:* "Bad selvage is often caused in the narrowing by the catch-bar being set too soon (early). This happens when the narrowing points have taken the loops from the needles, transferred them over two needles, and gone down in between the knockover bits to deliver the loops back to the needles. If, in such a case, the catchbar brings the sinkers and dividers forward before the fabric is lying on the knockover bits, the tips of the sinkers will catch the thread on the side where the carrier stops, thus throwing a loop and sometimes cutting the yarn. This results in a ragged and uneven selvage. An adjustable bit is furnished on the back catchbar cams for the purpose of furnishing a means of adjusting the catchbar timing. If the above conditions occur, retard the bit until you are sure the fabric is entirely down on the knockover bits before the sinkers and dividers are brought forward."

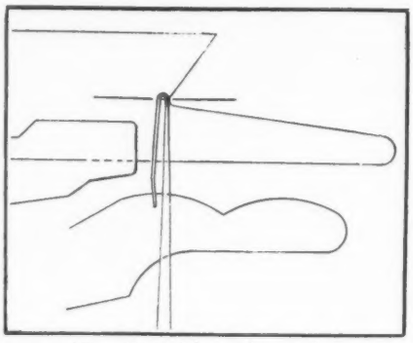


Fig. F16. Thread passing

In the Knitting Machine Lectures of the Wyomissing Polytechnic Institute it is stated: "During the narrowing operation the catchbar moves the sinkers and dividers forward to push the thread which is leading up from the end needle to the tube in the thread carrier to such a position that the two end narrowing points, as they descend, will catch and pinch this thread between them, thereby holding it at a much higher position than it would be held otherwise when the lateral movement of the narrowing points takes place. Consequently, when the sinkers move forward, after the loops have been transferred, the thread will lie on the nose of the end sinker instead of slipping beneath it."

## Circular Machines—Chapter IX—Cams and Picks

By JULIAN W. HUGHES

**CAMS FOR ACTUATING NEEDLES** of circular hosiery machines can be divided into two classes: Those which act directly on the needles, for regular knitting; and those which act indirectly on the needles through jacks, for effecting fancy designs in the knitted fabric. Cams of all circular machines are much the same in principle, differing only in detail. The accompanying illustration, Fig. C15, is a front elevation of the cylinder and cam assembly on the Banner wrap machine and shows the location of both the regular knitting cams and the jack cams.

When the leg of circular hosiery is completed, half the needles on the cylinder, known as high-butt needles, are raised out of knitting action, and the cylinder begins a reciprocating movement to produce the heel pocket. On the first reciprocal cycle of the cylinder, the two needles on the ends of the low-butt section are engaged by pick fingers and raised out of knitting action to take their places with the high-butt needles. On each succeeding cycle, the end needles are raised, and this continues until only about one-third of the low-butt needles are left in knitting position. This operation is known as narrowing, and the pick fingers that raise these needles out of action are known as narrowing picks.

When the narrowing is complete, the heel pocket is half knitted, and the process is reversed to complete the other half. On reciprocal strokes, a pair of picks lower the needles alternately; this is known as widening, and the picks which lower the needles are widening picks. When all the low-butt needles are again knitting action, the high-butt needles are lowered to normal level, and regular circular knitting is resumed for the foot.

When the foot is complete, the same narrowing and widening operations are repeated to knit the toe. When the toe pocket is complete, twelve courses are knit for the looper's margin, finishing the stocking as far as the knitting is concerned. The narrowing picks are shown at Fig. C16, and the widening pick bracket assembly at Fig. C17.

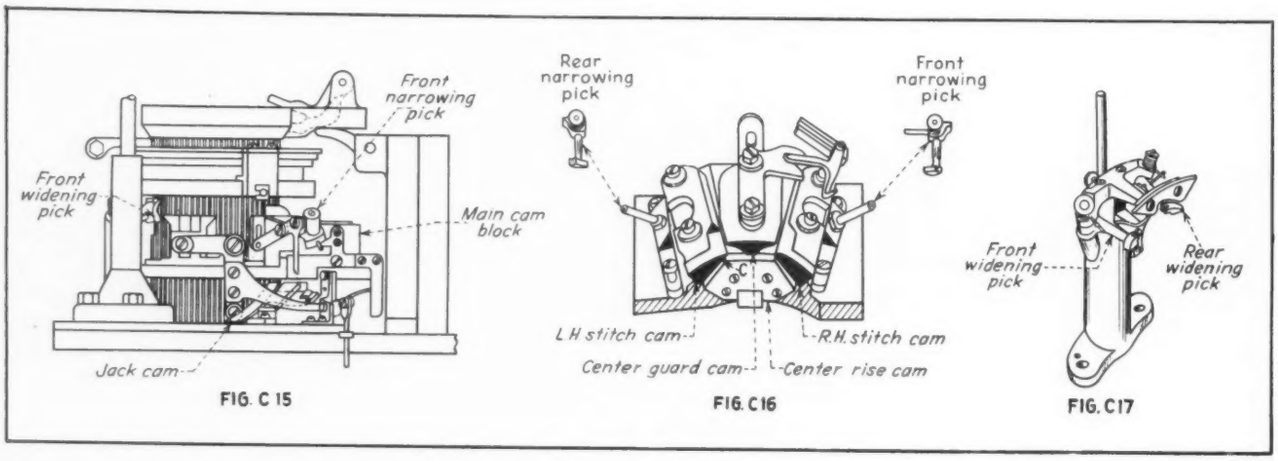



Fig. C15. Cylinder and cam assembly of Banner wrap machine. Fig. C16. Stitch-cams and main cam block. Fig. C17. Widening pick bracket assembly

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

# Solving the Great "Textile Mystery"

**ANY ONE COLUMNIST,** writing on his or her own, can make a whole lot out of very little. But when two of them collaborate on a column, they make not merely twice as much out of very little; the increase is some sort of mathematical progression which we didn't study in college.

A case in point is a piece called "Textile Mystery," tacked on to one of the daily syndicated columns produced by Robert Allen and Drew Pearson under the title of "Washington Merry-Go-Round." The particular clipping we have in hand is from the Atlanta *Journal* of March 26. Here it is—heading and all:

### Textile Mystery

"There has been no publicity about it, but defense authorities are quietly investigating the following strange textile mystery:

"There is an abundance of cotton, hundreds of warehouses being stocked to the eaves with surplus bales. There has been very little increase in the price of the commodity. Also, there are ample mill facilities—about 24,000,000 spindles which experts say are sufficient to meet both defense and consumer needs if operated at full capacity.

"Yet despite all these favorable factors, the output of khakis, denims and drills has not kept pace with demands, and prices are steadily climbing skyward.

"In the private opinion of price-control experts of the Defense Commission, there is a definite connection between the textile shortage, the mounting price trend and the booming profits; and, they infer that this shortage is artificial.

"According to them, the industry's capacity is ample to meet both consumer and military demands if the mills are worked on a three-shift basis. But so far, they say, average mill operation is largely on a two-shift basis—not sufficient to supply the country's greatly expanded requirements.

"That is why Government experts are making a quiet investigation to find out why the industry is not running at full capacity."

**NOW THAT'S REALLY SOMETHING.** The idea, as we get it, is that the cotton surplus could be chewed up by 24,000,000 spindles, operating on three shifts, into unlimited quantities of "khakis, denims and drills" at the wave of someone's wand.

That idea intrigues us. In fact, it makes the once-famous cult of Technocrats look like pikers. All you have to do is to figure the poundage weight of cotton goods required to fill both military and consumer demands; calculate the potential output of 24,000,000 spindles, working three shifts; and then, if one equals the other, there you have it.

If the industry isn't producing according to this formula, there is an "artificial shortage." Eureka!

It would be unkind to inform Messrs. Allen and Pearson that spindles don't produce "khakis, denims and drills," and that there are such minor matters as twisters, looms, finishing equipment, workers, housing facilities, time element, etc., etc., which might make a difference of a pound or two here or there, one way or the other. That would be like telling a child there isn't any Santa Claus. Besides, it's too technical. And columnists are not supposed to be technical. They merely know what they (make other people) read in the papers.

**HOWEVER,** for the purposes of the record, and not for the edification of Messrs. Allen and Pearson, it might be well to set down just a few of the clues to this great "textile mystery":

1. The Army changed the specifications on many of its required cotton cloths and called for combed-yarn fabrics, of ply yarn. . . . The major part of the industry is equipped to produce single carded yarns and carded-yarn fabrics. In the combed-yarn section there is a shortage of twister spindles, required to produce ply yarns. Also, while there is a surplus of cotton as cotton, there is an actual scarcity of the longer staples.

2. The Army first requested bids on combed-yarn fabrics in quantities, and for delivery dates, utterly impossible from a practical manufacturing standpoint. . . . Later realizing this fact, the Army included alternate specifications, and is now "spreading the work" over longer delivery periods. The result was that recent invitations for bids on so-called "bottleneck" fabrics have been oversubscribed.

3. The pressure of those early invitations for bids placed a great strain upon textile markets, and particularly upon combed-yarn prices. . . . Market quotations on both yarns and fabrics and knit goods were kept far more within restrained limitations, during those early months of pressure, than could have been reasonably expected under the circumstances.

4. The price advances in March were apparently due to a sudden realization of commercial buyers, of the tight stock situation and the apparent continuing demand. How much speculative buying contributed to that ad-

vance is anyone's guess. If the "price-control experts of the Defense Commission" have any exact knowledge of the status of stocks in hands beyond mills, no one would welcome that information more than would textile manufacturers.

5. All mills that could go on three shifts have done so. Textile-mill activity in 1940 reached an all-time high. The record for the first two months of 1941 promises an eclipse of that record. The only worry that students of the industry—including this writer—have at present is that we are setting the stage for another debauch, and eventually another collapse, such as 1937.

6. The prospect of higher wage minima under the Wage-Hour Act; of increased costs of materials, supplies and equipment; and of incalculable increases in taxes, makes it probable that today's prices on cotton yarns and fabrics, even with the advances in March, are not excessively profitable.

7. There are many other imponderables in this picture: the competition from other industries for the available skilled workers; the possibility of securing quickly needed equipment to balance a mill's productive status; the ability to provide housing facilities for a third shift.

8. So far as this writer knows, there has been not the slightest coordination of action in the industry to produce an "artificial shortage" of goods, or an artificial level of "mounting price trends and booming profits." And he thinks he knows his industry! On the contrary, the great lack has been one of coordination—and through this lack, more than any other, the defense program has suffered.

**NONE OF THE ABOVE** is a criticism of the Army or of the OPM. The Army has profited by its early experiences and has tried to adjust its demands to reasonable industry performance. The OPM has had the advice of men like Arthur Besse, Robert Stevens, Charles Sweet, Earle Stall, H. J. White, Ray Bell—and now Frank Walton. The price-control division of the OPM has had at its command all the facilities of this expert group.

Nor is there anything in the above that denies the need of caution on the part of the industry in watching its price structure. On the contrary, that is the industry's No. 1 Job.

There is much to be achieved before textile production for defense purposes reaches its optimum status. But that day will not be hastened by the projection of a great "textile mystery."

The real mystery, in this writer's opinion, is how a duo of columnists can be paid so much for writing about something of which they know so little!

# THE EDITOR SAYS

## It's All-Out, *Now*

The shot heard round the world in 1776 had its 1941 counterpart in the sigh of relief which went round the world last month when Yugoslavia revolted against Nazi domination. In itself, it may prove to be only a token resistance. But in its implications, it voices the wish of all the erst-while free peoples of Europe. It is the handwriting on the wall.

And this fact must be kept in mind: The revolt of Yugoslavia and the brave stand of Greece would not have been remotely possible if one nation, Great Britain, had not decided long ago that even extermination was preferable to Hitler slavery. In carrying out that decision, England has taken more punishment than any nation in modern history. She is still taking it, and has more to take in the future. But she has proved that she *can* take it, and *will* take it.

This makes the role of the United States a still more demanding one. We have adopted, by the overwhelming will of the majority of our citizens, the role of the "arsenal of democracy." Thus far that role has been an easy one. Speaking quite frankly, it has meant higher wages and greater profits. But *our* sacrifice is ahead. No one knows how great it may be, or what forms it may take, but any intelligent person knows that we are engaged in a war to save everything we hold dear—and that we must be prepared to pay *any* price for victory in that war.

What we need is an all-out attitude. We haven't achieved it, as the headlines in recent weeks reveal. From a purely selfish standpoint, we would be wise to achieve it while we still have a going ally, Great Britain, and while the British fleet is still our front line of defense. Once we pass that status, it may be too late.

This writer has a hunch that we may have to get into this war as an active participant before we are through. As he stated on this page last month, he has felt this for a long time. But that's a personal opinion, and relatively unimportant. However he has a further hunch that more and more people will feel this way as the next six months develop.

This spring and summer and fall may tell the story. Hitler will stop at nothing, now. No weapon will be too mean or too despicable for him to use. Each new form of resistance to him will unleash a still more fiendish reprisal from him. What is left of the free world must face that fact.

This country must face it and must be prepared to meet whatever the future—and it is probably the near future—holds. Certainly, we cannot be less ardent in our defense of democracy than are England and Yugoslavia and Greece, each on the front line, each within reach of the monster's deadly fangs.

We must go all-out in our present role, and we must be ready to go all out in whatever role the future demands of us.

History will record of England, under Churchill, some of its most brilliant pages. Let us hope it will record of this country equally brilliant ones.

## Another Minute-Man

As one more minute-man, Ray Bell, returns to his desk after service with the OPM, he adds his contribution to the record built up by his predecessors. He has done a swell job.

This is only the beginning. More and more men will be called from the textile industry to aid in this country's all-out effort. Their predecessors have set a high standard of precedent. The new recruits must be prepared to match, and even surpass, it—as the need becomes more urgent.

## Stop, Look, and THINK!

If plain common-sense were to be the determining factor, there would be no new textile committees appointed under the wage-hour act. Textile labor has already under its belt unprecedented gains, and assurances. Textile-mill management has equal assurances that the wage collapse of the major depression, with its unfair competitive practices, cannot happen again. The rest could be left safely to changing business conditions and to bargaining under those conditions.

But there is a law on the statute-books, and the administrator feels that he must push it rapidly to its ultimate objectives, even though there are still years to go. He may be right or wrong in his psychology, but at least he is within legal bounds in his action.

With that as a basis, what should be the attitude of representatives of employers, employees, and the "public," who are now meeting to consider and

possibly revise existing textile-wage minima under the law?

1. There should be no re-awakening of the North vs. South controversy. All in this industry, just as all in this country, are now all in the same boat. They have a common enemy: Hitler.

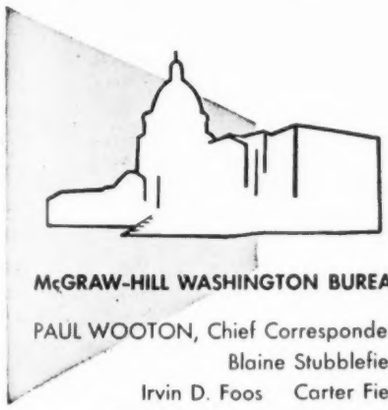
2. There should be no bitter conflict between management and labor, within the committee. Each side has everything to lose, and very little possible to gain, through dissension in the midst of this present world mess. Each side has freedom to lose—and experience in Europe has taught that labor-democracy loses even more under totalitarianism than does industry. A Hitler must salvage some sort of an industrial management; he does not need to salvage labor unions.

3. Whatever action is taken within the committee must be based on the realization that too high wage minima, figured on today's boom conditions, will be boomerangs when the inevitable reaction and depression arrive. Industry and labor will dry up, and the public will pay, as always. So let the "public" members of the committee beware!

4. This is no time for academic social reform. It is a time for stark realism. *So*, every word that is spoken in the committee room, and every action that is proposed there, should be prefaced by this question: What effect will this have on our all-out program of defense against Hitlerism, and what effect will it have on our national economy when we start to pay the bill.

# War Dept. Gets Its Second Wind

## Textile needs well in hand—May drop foreign wool penalty in gesture to S. A.




**McGRAW-HILL WASHINGTON BUREAU**

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos  Carter Field
Robert Colborn  M. G. Maury

By BLAINE STUBBLEFIELD


**SUCCESS** of the Quartermaster's long-range procurement program, under the recent appropriation of $175,000,000, was realized in mid-March when manufacturers offered 52,800,000 yd. of cotton uniform twill, on a call for not more than 38,000,000 yd. Officials explained that this tender would not have been possible under previous emergency short-period terms. Awards were made at once on only 24,065,000 sq. yd. of the offering. Asked the reason, QM had "no comment," but undoubtedly price was the deterrent. The twill was specified in five construction variations in combed and carded yarn.

Thus the War Department, in cooperation with OPM, has gained second wind in its textile race against possible emergency needs. And possibly none too soon. For the fifth supplemental defense appropriation bill, on its way to enactment as this was written, carried funds for the equipment (non-textile) of an eventual combat Army of 4,000,000 men, equal to the man-power turned out during the World War. Speculation on when or whether this force might be mobilized seemed quite useless, but beyond doubt the Government is considering all eventualities.

Recent action by Congress, in the fifth supplemental appropriation, forbids importation of foreign foods and fibers, except when, in the judgment of department heads, domestic supply and price justify such importation. This adds up to nothing more than a "good neighbor" gesture. The Army can buy foreign wool, for example, just as it could before Congress acted. And the differential or penalty against foreign wool, if any, will be adjusted at the time of purchase, on the basis of domestic price and supply, just as it was before.

Several other changes in the terms of textile contracts have been made. One is advance notice to Government contractors of changes in legal minimum wages. This is merely an agreement between Donald Nelson's Division of Purchases of OPM, and the Walsh-Healy and Wage-Hour Divisions of the Labor Department.

Another change was the release by QM, early in March, of a clause to be inserted in cotton-textile bid invitations, protecting contractors against any processing tax that may be enacted by Congress. Such a tax was imposed several years ago. It was outlawed by the Supreme Court, but certain legislative groups constantly threaten to try it again, under some new title.

Still another instruction to bidders deals with local and State taxes. Manufacturing for the Government is exempt from local sales taxes. To facilitate the evaluation of bids, these taxes should be omitted from prices quoted to the government. But they should be clearly itemized for the Government's use in issuing exemption certificates to the manufacturers.

**SPEAKING OF PRICES**, the Quartermaster seems to be satisfied with some increases, and in other cases, confident of its ability to keep matters in hand. On the 25c. increase in the cost of blankets, for instance, QM says that advances in wages and wool were legitimate.

Not all manufacturers who quote the right price and get Government orders find complete happiness. Several have met grief in the dyeing in the form of rejections for off-color. Complaints have spread that procurement men have submitted varying OD and khaki shades to manufacturers. This appears to be untrue, except to the extent that swatches, much used, do fade a little. But all color-matching is done at one place, Philadelphia Depot, and QM feels it is not to blame. Experts say dyeing to match requires great skill and manufacturers should not try it without competent men and the right equipment. QM sample rooms show a wide range of OD, all the way from the deep green to chartreuse; some run to plain brown and even taupe. The problem is difficult. Even identical shades of dye look much different in different materials and construction. Khaki is not nearly so hard to handle as OD.

Incidentally, the War Department is still considering the advisability of changing its tents from khaki to OD. It is also thinking about adding to its initial clothing allowance: 4 trousers; 1 field hat; 4 shirts; 3 work suits; 6 sox; 6 drawers; and 6 undershirts—all cotton—effective July 1.

# Greenville Show Most Resultful

## Size and seriousness of business compensates for fewer technical changes

**THERE HAVE BEEN** textile shows which reflected more revolutionary technical development than did the 1941 Southern Textile Exposition, held March 31 to April 5, at Greenville, S. C. But there never has been a show held under a more critical world and national situation, nor under conditions of greater demand—pressure upon both equipment makers and textile manufacturers. The latter fact largely explains the former. Boom conditions do not encourage new designs; the major job is to get out deliveries.

It is doubtful, also, if there ever was a Greenville show which was marked by greater seriousness of attitude on the part of both exhibitors and visitors. There is always back-slapping and horseplay, of course, but this year it seemed strangely limited, a little forced, and even out of place. Most men seemed to feel the gravity of the situation, the importance of the business at hand. This fact, plus the fact that the exposition set a new high for size, makes it possible to report that the 1941 show was probably the most resultful one, from the standpoint of its effect upon the industry, ever held.

Furthermore, looking ahead it is probable that the 1943 show, if one dares to gaze that far into the future, will record revolutionary changes, as the result of this very critical situation. Pressure upon machine shops, upon materials, upon practically all phases of manufacturing, will necessitate ingenuity in the form of both substitution and creative effort. In fact, if the emergency lasts long enough, it could very possibly have a radical and permanent effect upon the technique of the industry. Thus, already a number of textile machinery manufacturers are devoting part of their facilities to production of defense materials. Again, the effect of the setting up of priorities for aluminum, magnesium, nickel, etc., is being felt by builders of textile equipment.

Particularly outstanding among the new developments featured at Greenville were preparatory and spinning equipment for cotton and for rayon staple, large-package twisters, automatic winders, high-speed looms, combination dyeing machines, power-transmission equipment, control instruments, and air conditioning systems. Following are brief descriptions of some of the more important developments noted. Certain items have been described in more detail in earlier issues of TEXTILE WORLD, and others will be covered more completely in subsequent issues.

**PREPARATORY EQUIPMENT.** Manufacturers of preparatory machinery stressed equipment designed to handle fibers 2 in. long and greater, especially synthetic blends. For example, a roller-card conversion for revolving flat cards, containing three sets of workers and strippers and a special feed plate and feed-roll arrangement, was featured for long-staple rayon mixtures.

A two-wheel card grinder was on display which is said to double the amount of cylinder grinding, overlapping in such a manner that the grinding is evenly distributed over the complete cylinder width. A card-clothing firm offered a special feed roll for synthetic fibers. In another booth stainless-steel card clothing was on display.

A two-coil drawing frame was shown which is said to double the production of conventional drawing, to require only half the number of sliver cans, to use only half the normal floor space, and to maintain quality. Twin webs emerge through the front roll, each being condensed through a specially designed trumpet; the two slivers produced at each delivery pass side by side through the calender rolls, through the tube gear, and are coiled in a single can.

A new cotton comber requiring less floor space is described in detail in the Textile Equipment News section of this issue.

Of several roving frames for long-staple fiber, one, designed especially for the working of staples ranging from 1½ to 3 in. in length, featured an effective draft of 12 to 40 on simple or complex blends. A new weighting system and other improvements were featured in another long-draft roving frame, which, in combination with a new drawing process, utilizes only one-half the usual number of drawing-sliver cans. A third roving frame emphasized a new head-end arrangement designed to facilitate the handling of the gearing and a new weighting system said to make cleaning easier.

Spinning frames featured new drafting assemblies for synthetic fibers, as well as for cotton. One of the drafting assemblies for synthetic fibers is designed to control fibers from 1 to 3 in. long. Another new drafting assembly, primarily for combed cotton, is said to operate efficiently at drafts ranging from 20 to 40.

An especially rugged cotton twister, designed particularly for the tire-cord trade was shown, together with a rayon twister somewhat lighter in construction. Both twisters have new builder motions for any type wind, and can be doffed continuously as the creel fills up. To overcome fatigue on the part of operatives and to conserve floor space, a new wet twister for the thread trade was shown with extremely low creels.

An improved spinning ring was in evidence with the side walls angled to prevent the traveler from wearing out the ring. Also featured was a twister ring with an automatic lubricating device. A new traveler has a special finish designed to lubricate and at the same time prevent excessive wear.

Along with standard cork cots featured by one firm, was a new synthetic "crack-proof" apron described in the Equipment News section of this issue. Another company showed a synthetic apron designed to stretch 5 to 7% with complete recovery and to resist roller abrasion.

**THROWING, WINDING, WARPING.** Large packages and headless packages were the outstanding features of the throwing exhibits. One doubler-twister shown can be equipped with either stationary or swinging spindles and rings, and has both twist and traverse gears at the same end of the frame. One up-twister, adaptable to either spools or headless packages, was running a 2½-lb. flyerless package at 7,200 r.p.m.; fabricated-steel rails, a precision traverse motion, and totally inclosed head and foot ends were other features. In the same booth, an up-twister operating on Nylon was insert-

View in Textile Hall, Greenville, during recent Southern Textile Exposition

ing 24 turns of twist in 40 denier yarn, twisting from pirns at 8,400 r.p.m. In another booth, an up-twister operating on large headless and flyerless packages was operating at 12,000 r.p.m. A high-speed redraw winding 400 yd. per min. was equipped with an adjustable full-package stop-motion, a brake on the supply package to prevent kinks when stopping spools, and a ball-bearing supply mount. One manufacturer featured an up-twister with a hold-out spindle brake, separators that swing out for cleaning, and die-cast fingers with replaceable steel-and-fiber inserts. Balanced twister bobbins, factory-checked on a spindle vibrometer, were shown in one exhibit.

The trend toward high-speed automatic machinery was marked by the appearance of two automatic filling winders. Both machines run at higher speeds and require less operative effort than previous winders, and both have been described in previous issues.

Several manufacturers exhibited new cone, cheese, or tube winders. A high-speed open-wind cheese winder was equipped with yarn conditioning attachment, nickel plated drip pan, and adjustable speed moistening roll; exhibited by the same manufacturer was a Nylon sizing machine which draws the yarn over a traversing sizing roll and winds it on cheese-like packages. Another exhibitor displayed a bobbin winder which simultaneously winds 48 bobbins on upright spindles, and is doffed in the same manner as a spinning frame. One cone winder is obtainable with three interchangeable slub catcher-tension devices, one of which has a paraffin cake equipped with a brake to prevent broken ends from winding around the cake spool. In the same booth a heavy-duty, coarse-yarn winder with a yardage stop-motion made its first appearance.

One manufacturer exhibited for the first time cop and butt winders equipped to wind a variety of yarns ranging from asbestos to paper.

An improvement in quill cleaning machines consisted of a stripper with an oscillating quill guard which does not nick or bruise bobbins.

For setting twist and conditioning all types of yarn, there was exhibited a conditioning machine with apron made of transparent plastic rods, spray nozzles on each side of the apron, and an undulating apron motion which revolves bobbins to insure uniform penetration. Another exhibitor displayed a yarn conditioner with walls, slats, and sprockets made of extremely strong and long-wearing plasticized cotton cloth; the inclined conveyor turns bobbins to insure uniform exposure of bobbins. The same manufacturer showed another yarn conditioner made of stainless steel, and containing four high-pressure sprays.

In warpers, the trend was toward direct beam drives. One builder showed a direct-drive warper with automatic constant-speed control for speeds from 50 to 1,000 yd. per min., a slow-start mechanism independent of warping speed, and provision for use of several types of beams; the same exhibitor displayed a counter-balanced gate tension for rayon warper creels. Another manufacturer showed a direct-drive warper operating at 550 yd. per min., controlled automatically through a variable-speed transmission; in the same exhibit, a narrow beam warper for tricot warps operated at 750 yd. per min. was equipped with a draw-roll attachment for keeping the yarn taut when backing the machine to piece-up broken ends.

**WEAVE-ROOM EQUIPMENT.** One loom manufacturer showed three new cotton looms which are heavier and built to operate at higher speeds than previous models for similar fabrics. Two of these are described in more detail in the Textile Equipment News section of this issue; the third, a 60-in. loom for weaving heavy fabrics up to and including light duck, operated at 160 picks per min. on a 96x64 fabric, was equipped with a beam with 26-in. diameter heads, and had space for rolls of cloth up to 21½-in. in diameter. Another loom builder exhibited a new filling mixing device which makes it possible to insert automatic-

ally a single pick from 3, 4, or 5 shuttles consecutively in order to weave overplaids or to eliminate unevenness due to yarn variation. The device was installed on a 4x2 loom which is convertible to 4x4 or 4x1. In the same exhibit, a new loom, 72-in. between swords, for weaving cotton, spun rayon, and blends was operating at 144 picks per min.

A new fabricated picker has an oval impact hole which is designed to increase the life of the picker; another is made in several parts, clamped to the picker stick, and requires replacement of only the face block. A reversible drop-box picker is varied in density in various parts to meet wear conditions. One leather manufacturer featured a new easily-replaceable picker-stick bumper. A new temple roll for rayon and silk is made of oil- and acid-proof material.

An improved shuttle for silk and rayon has an adjustable eye to give an even tension from start to finish; a telescopic lock screw holding the bobbin clip permits centering the clip in the shuttle. One shuttle manufacturer featured a one-piece guide and catch which grip bobbin butts more firmly, reducing the tendency to damage the bobbins. Stainless-steel heddles and reeds were shown in one booth, along with a new damp-proof, non-lint collecting harness finish. Also of interest to weavers was a new two-shift pick counter which can be converted into a three-shift counter if occasion arises.

**DYEING AND FINISHING.** Introduced at the show was a new stainless steel, combination beam and package dyeing machine; mechanical features include automatically controlled valves and special means for controlling flow of liquor through the beams according to the density of the yarn on the beams. The manufacturer of the dyeing machine also featured a new type of package dryer designed to permit more rapid drying and to recondition the dried yarn to any desired moisture content. An improved beam and package dyeing machine shown by another exhibitor in conjunction with a manufacturer of control instruments will be referred to later.

Novel among finishing plant equipment was a de-twisting machine for removing twist from goods in rope form as they come from wet processes. The detwisting machine can be placed before a scutcher or other machine or can be employed for untwisting and opening up rayon and other light-weight or fragile fabrics which cannot be scutched.

One manufacturer of finishing machinery displayed a special, heavy, two-roll padder with an unusually wide arrangement of rolls; the machine is equipped with anti-friction bearings throughout, pressure attachments of compound lever and weight design, and variable-speed drive.

Two machines shown by another company were a new, heavy, high-production duplex sewing and winding machine—described in our March issue—for supplying rayon fabrics from large-diameter rolls to automatic shears, and a cloth inspection machine with photoelectric controls which permit the operator to start and stop the machine merely by interrupting with knee or dress a conveniently located light beam.

Displayed for the first time was a new stroboscopic inspection machine for the inspection of cloth being printed at high speeds.

Among new sewing machines were an overedging machine for producing neat, compact hems on handkerchiefs, etc; a self-oiling, small-cylinder, feed-off-the-arm machine for closing garments; and two high-speed single-needles machines—both operating at speeds up to 5,000 r.p.m., and one of the self-lubricating type.

**POWER TRANSMISSION.** Among power-transmission equipment were a turbine-electric drive for finishing ranges and cloth printing; a new speed variator for adjustable-voltage-control, d.c. motors; the a.c. variable-speed drive described this month in our Textile Equipment News department; and a new design in NEMA a.c. motors with Nylon insulation.

For the first time was shown a cadmium-plated, close-tolerance, high-carbon card flat chain. Also of interest was a concave-face double V-belt designed to prevent turning and twisting. A new line of manual and magnetic operated motor starters, and similar equipment was shown by an exhibitor who made his debut at the exposition this year.

Also, there was shown a new adjustable speed drive for equipment requiring quick speed changes, utilizing standard V-belts and requiring no manual adjustment; there are no threaded members or key ways. Another manufacturer featured a hydraulic control arranged so that a few ounces of pressure changes the variable-speed mechanism.

Several new types of bearings were shown, including mandrel unit bearings for printing machines, treadle roller bearings for Draper looms, horizontal and vertical ball-bearing tension pulleys, and sealed cylinder-shaft bearings for spinning frames.

**AIR CONDITIONING.** Two manufacturers of air conditioning apparatus featured the new electrostatic dust precipitators in conjunction with their regular equipment. One firm showed in operation the electrostatic device described in detail in the March issue. For use with its air-conditioning equipment another manufacturer demonstrated an electrostatic cleaner which collects the airborne particles electrically on a filter curtain and automatically washes the particles from the curtain by passing it continuously through an oil bath. A third firm displayed an evaporative air-cooling system which does not require ducts.

**LIGHTING.** Fluorescent units were featured in practically every exhibit devoted to lighting equipment. Recent developments along these lines which were emphasized include continuous trough and continuous wiring channel systems, high-intensity units, and low-brightness reflectors. Among lighting equipment other than that of the fluorescent type were included incandescent lamps with silvered reflecting surface on inside of the bulb; available for some time, these lamps have not been exhibited at previous shows.

**CONTROL EQUIPMENT.** An innovation in control equipment was a moisture-content controller for application to slashers; this device is designed to maintain the moisture content within a small fraction of 1%, either by regulating the speed of the dryer, the temperature of the cylinders, or both. Another moisture-content controller for cotton slashers exhibited two years ago has been adapted for use on rayon sizing machines. An improved automatic control applied to one of the beam and package dyeing machines mentioned previously affords a quicker method of bringing the dyebath to any desired temperature and controls the time of a newly added cooling cycle in the dyeing operation. One instrument manufacturer demonstrated the pneumatic loader—described in our January issue—for padders and other squeeze-roll machines.

A special control enabling an operator to pre-determine a definite program of operations for hosiery dyeing and for finishing operations made its initial appearance.

**NEW CHEMICALS.** Prominent among new chemicals were warp sizing materials, wetting agents, binders for use

*(Continued on page 132)*

# English Textile Output Little Hurt

## Bombing stops less than 1% of production—"Better Manchester" coming

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By J. GUTHRIE OLIVER
Manchester (Eng.) Correspondent, Textile World

**THE PRODUCTION OF TEXTILES** In England at the present time is far from a picnic, but the interesting fact is that despite every trouble from within and without, the actual production of goods goes on with the minimum of loss. Our friends across the Atlantic are always anxious to know how far the bombing of the towns has interfered with output, and it will be my endeavor to give an idea of the position without at the same time running the risk of giving information to the enemy. The plain truth is that the production of cotton and rayon textiles has been stopped by bombing only to a fraction of 1%.

In view of the serious attacks which have been made on the country this statement no doubt requires some further explanation. England is so small an area and the textile districts are so congregated together that such a result after 18 months of war borders on the incredible and yet it is so. The enemy has lodged his attacks on the great centers of population in an effort to reduce the morale of the people. He has been utterly unsuccessful in this. The production of textiles is not in general carried on in these large centers. There is little production in London and there is very little in the center of Manchester and these are the two textile towns where bombing has been worst. There have been some casualties in the textile mills but in the great "blitz" at Coventry there was no great damage done to the rayon plants, directly or indirectly.

It may be asked then "What trouble has been caused?" "Have the ports been seriously damaged?" It must be astounding to read in the press of attack after attack on the port of Liverpool. Yet, the interference with the supply of raw cotton and in the shipment of goods has been very slight and altogether out of proportion to the effort made by the enemy.

In the great incendiary raids at the end of 1940, there was a loss of textile stocks in London and to a smaller extent in Manchester. The important point is that this did not interfere with production. Then again, following the policy of indiscriminately attacking the civilian population, there have been losses in retail stores and sadder still in the small retail shops, so characteristic of England. This sort of thing, however, does nothing toward winning the war or reducing our effort. In general it has always been the older property which has gone and there will be a better London and Manchester when all this is over.

**TROUBLES,** however, in the textile trades do not end with the "All-Clear" in the morning, for manufacturers are really much more concerned about the daily difficulties of trade than they are about bombing. It cannot be denied that England has a colossal job on and that the key to the whole business is shipping and its protection.

Moreover, we are determined to avoid as far as possible inflation of the currency and this means that every ton less imported and every ton more exported in the right direction helps to save the situation. Many people would never have believed that after 18 months of the costliest war in history the old British War Loan would be standing well above par.

Moreover this is a war when the man in the fighting line needs equipment on a scale never before dreamt of, and this means that the textile industries must release all the men and women they can. Thus we must "cut our cost according to the cloth." The huge demand for cotton goods for the Government must have absolute priority; then must come the export trade, especially that which brings the valuable dollars we need to buy munitions; and finally the home consumer must be satisfied. Obviously it is the latter who has to suffer if anybody does.

A fairly good idea of the situation may be gained from the fact that sales by wholesalers to the retail after April 1 are to be restricted in the case of cotton goods to 20% of the pre-war volume and in the case of rayon to 40% of pre-war. The higher percentage in the case of rayon is due to the fact that whereas one-half of the cotton goods produced in this country used to be exported, only one-quarter of the rayon goods were sent abroad. Thus if the rayon quota was reduced to lower than 40% the basis upon which export can be developed would be destroyed. This is especially important as rayon is a better export proposition.

The general public has not really felt the position as yet for the stocks which were in the country and which indeed still remain will continue to soften the blow for some time to come. Later, no doubt, the public will feel the shortages though there is no reason to believe that it will cause any real discomfort. Of course such luxuries as silk stockings are to be abolished from the shops but that makes no real difference when there is rayon. We also produce Nylon.

At the moment, the great new munition factories are just coming into production and we are facing the real demand for labor. Constant meetings are being held in order to settle the methods by which the desired aim will be accomplished. Economic facts favor the shutting down of whole units. Traders would like to adopt the spread-over system and there are advantages in this for such a complicated trade. The final system has not yet been settled, but it seems obvious that some plants will have to close as the productive facilities of the cotton and rayon industries are far in excess of Government requirements plus exports plus the small home demand, caused by the restrictions.

Never in the long history of this island have the people been so united under one strong leadership and this is our guarantee.

•

Press despatches, dated London March 25, have reported plans for closing 200 of Lancashire's 550 cotton spinning mills under the Government's plan for concentration of industry and release of workers to arms plants.

# Fashions According to America

## Spring showings mark first real test of this country's attempt at leadership

**"SPRING 1941 WILL TELL THE TALE!** American fashiondom—being so adept at adapting—can 'get by' without Paris for about a year. Then, what will happen?" That's about what "they" were saying a year ago! And what "they" meant was that America knew so little about originating and creating fashion design that without Paris we'd be forever doomed to the clothes with which Paris drew her last breath.

Our day has arrived! So let's take a look at the picture! It's hardly as black as the prognosticators painted it. This spring's collections of our fashion creators indicate that we're getting along nicely—if a bit slowly—with our "new" ideas. We won't claim that none of them has ever been done before or that all of them stemmed strictly from Daniel Boone, but, then, many of the so-called "Paris Originals," were fashion ideas that had cropped up from some spot in the past! Our new clothes —and a few of the fabrics—show unmistakable signs of originality, particularly in the use of color. Some of the prints and yarn-dyed fabrics are as new as the daffodils now blooming.

**NEW FASHIONS — SPRING 1941:** If there's one thing about them that seems to stand out more than any other, this spring's clothes are becoming and comfortable for the wearer. They seem to indicate a certain sense of freedom and are designed to fit into the American woman's life—her activities—her need for "a dress or coat to go anywhere at any time." Just in case you might be interested, one of our fashion writers calls spring 1941 fashions "the successful presentation of the female figure." (Aren't we glad this isn't among the "new" ideas!)

Woolknit cape and suit ensemble, nubby-knit in beige and brown — comfortable and smart. Photo released by Bureau of Fashion Trends. →

"Paintings-to-Wear"—one of eleven paintings transferred to silk by screen-printing by the Cramer Printing Co. Paintings by Count René Bouet-Williaumez; presented by Saks Fifth Ave.; for use as scarf, sash, turban, or hanging. ↓

**IN THE SPRING'S FASHIONS,** the big news is: sloping shoulders, dolman sleeves, slit skirts, tiered skirts for evening, militaria, Americana, draped gowns, peplums, boleros, polka dots, frilly blouses and neckwear, capes of all sorts, and suits (often made of faille, covert cloth, homespun-type tweeds or gabardine.)

Just where or when all of these various ideas "originated" would be a tough one to answer. We do know that about six years ago Schiaparelli said something about "padded shoulders making women's hips appear smaller." (P. S. That made a tremendous hit!) Last fall, the same lady forgot all about the hips and designed for herself a red coat that didn't seem to have any shoulders at all —much less padded ones. So, that's probably where "sloped shoulders" came from! And, when shoulders slope, the dolman sleeve is simply the next step.

As for lowered waistlines, peplums, tiered skirts, slit skirts, draped gowns and boleros, we've had the same and other versions of them for the last year or so.

If it's a question of whether or not we have "exhausted" the carry-over of inspiration from France, the answer is "no." But, we *are* showing our mettle with a sprinkling of brand new ideas. Following an already-established trend, we are putting out some superb sports clothes with new color and texture mating! We have done wonders with the coordinating of accessories and the creation of unusual footwear. America's 1941 sparkle can be seen in "desert colors from the Southwest," the Pan-American influence that's seeping in, and in the plugging for "Stars and Stripes Forever."

And as for the glorification of American handwork, one has only to catch a bird's eye view of the spring showings to see that fine dressmaker details, "homespun" fabrics, exclusive hand-blocked prints, interesting trapunto work, handknits and quilted trimming mark a revived interest in things "made by hand."

**NEW FABRICS — SPRING 1941:** There are probably too few new fabrics—spring 1941! But that shouldn't be a

© *Time, Inc., 1941; courtesy Life Magazine*

Far North in slit skirts is this "show-girl" fashion in black net, entered in Los Angeles Fashion Futures show by Milo Anderson.

discouraging revelation, for, after all, we've had very little time—plus some good old standbys that have been on the up-and-coming list for a year or more! To wit, such suitings as covert, gabardine, glen plaids and the large family of checks. America has always adored polka dots and geometric prints—so when they're on well-known rayon and/or silk crepes (lots of them washable) there doesn't seem to be any point in trying to change the situation!

Cotton—particularly as pique—has poked its head into some unique "high-fashion" places this spring. One that seemed a little unusual was a white evening coat—dotted with jet beads.

Of the really "new" fabrics, there are a few exquisitely-colored plaids—some of them done, 'tis said, on hand looms. Also worth honorable mention are a number of knitted materials—made from various fibers and various weight yarns—sometimes slubbed or nubbed.

Hand-blocked and hand-screened prints of exclusive design have been shown for "the up-town trade." Main-bocher uses one in a lovely gown. Saks Fifth Avenue has perfectly scrumptious scarfs, screen-printed with original "paintings" in all kinds of high colors.

Admittedly, the future success of American fashion leadership lies partially with fabric makers who believe in creative design, will work directly with clothing designers, and be willing to spend money and patience to experiment with new materials. (The woman's shoe industry—the tanners, plastics manufacturers, the rubber industry and fabric makers have been partly responsible, you know!) It takes a good deal of time to put all these factors on a smooth-running, productive basis, but America *can* create fabrics. Oh, we know that fabric makers must produce fabrics that will wear (the consumer says so!), that will sell (the store says so!), that aren't too expensive (the manufacturer says so!), that are original and distinctive (everybody says so!) and the fine fabrics maker must, in addition, keep his name and fashion prestige constantly in the publicity channels! It just doesn't seem enough—what with the Axis and Pan-American relations!

**THE COUTURIERS OF PARIS** created for the individuals of a "clientele." Here, 120 million consumers select from an abundance of manufactured articles just as many as their needs demand and their pocketbooks will allow. These self-same consumers haven't always bought that which was most beautiful and becoming—as did the clientele! This rather served to give the impression that no matter what it was, if it came under the head of "new fashion idea," everybody would buy it!

However, Mrs. Consumer has been "wiseing up" a bit lately! Just think of the advertising, promotion and educational efforts that have been spent to make her so! Today, the fashion creator — the manufacturer — the retailer must deal with an informed public. "I want to see a shirtmaker dress!" "The material must be washable!" "Are these three-thread, 51-gauge stockings?" Such consumer comments indicate that Mrs. America is apt to have more of a finger in the fashion pie than she ever has had before.

To America's fashion stores we go to choose from the fashions selected by the store's buyers. So consumers are looking to stores for fashion leadership!

**THERE'S BEEN A GOOD DEAL** of talk about shifting "The Fashion Center" from Paris to New York—just as though a fashion center was something to be bundled onto a boat and let out at Ellis Island! The building of any cultural center takes years of artistic effort and can never be other than a natural flow of the spirit from which it springs. For the democratic country of America—that's only a slap and a dash, culturally—there cannot be prescribed an autocratic caste system of fashion leadership. Neither can we expect to find fashion leadership localized.

Here, it is *America* that will do the leading! We get beautiful gloves from Gloversville, homespuns from the Southern Highlands, shoes from St. Louis and myriads of ideas from Hollywood—as well as exquisite creations from Fifth Avenue, New York.

One vitally important slant to building fashion prestige is publicity. Clothes stripped of their news worthiness may be perfectly beautiful to behold, but they won't make a ripple on the pond. At the recent openings in New York, there was, to be sure, evidence of new trends beginning but there wasn't a completely "wacky" dress in the lot; there wasn't a single "shocking" idea! Everything was "wearable" and comfortable! Now that's all very nice for consumers will buy them—but it's not much of a way to get people from coast to coast talking about the daring and originality of New York clothes. Rather, one might point to the gartered "show girl" dress shown here which is—to say the least—different! (P. S. It came from Hollywood!)

# No Fireworks at Wool Hearing

## FTC labeling rules plentifully criticised but with aim to make them work

**AT A HEARING** in Washington April 2, which surprised everybody by ending in two hours and a half, wool manufacturing and distributing interests presented their objections to the Federal Trade Commission's proposed rules for administration of the Wool Products Labeling Act. The big FTC hearing room was packed with people, each of whom seemed to expect the other fellow to furnish some excitement.

Those who attended the hearing came away with the feeling that FTC would not long delay, and that the rules in final form might be issued before the end of April. The proposed rules as issued by FTC on March 15 consist of 15 mimeographed pages containing 32 rules. A number of the rules do not go beyond the language of the act itself. A number of the rules, however, add provisions which business men in various fields do not find in the wording of the act nor in the minds of Congress as deduced from the argument which preceded passage of the act. Other rules retain some of the ambiguities of the law itself. These last two types of rules were the ones which came in for criticism.

Although there have been several recommendations that the effective date of the Wool Products Labeling Act be postponed, it is not seriously thought in the trade that such action is likely from any quarter. A resolution was introduced to the Senate on March 31 by Senator Thomas of Oklahoma, which would postpone the effectiveness of the act until 30 days after the signing of a treaty of peace between Germany and England. The various trade bodies have definitely stayed away from asking postponement, since they regard the act as a law of the land and their interest in it now is primarily one of making it function as smoothly, fairly and economically as possible. There is some question of constitutionality, but that will come later.

A major point of the hearing was the question what to do about unmarked goods in stock on July 14, the effective date of the law. Yarn and cloth mills will simply label their goods on hand as to wool content. But some manufacturers further down the line and many dealers will have difficulty in determining fiber percentages. It was suggested that FTC exercise lenience concerning these goods, and permit that they be marked something like "content unknown". The question was raised, in corridor talk, whether such labeling would tend to depress retail prices, and opinion differed.

Another major objection was registered by retailers who don't like the prospect of revealing the name of their manufacturers on labels. Different retailers sometimes sell identical products from the same manufacturer for different prices. More often products from the same house, which only *appear* to be similar, are sold for different prices. Both of these occurrences will cause retailers trouble, they said, if the names of the manufacturers must be revealed. Observers at the hearing got the impression that FTC might be more sympathetic toward the unmarked goods problem than toward the matter of revealing manufacturers names.

From the discussion, there was evident uncertainty as to just when wool products under the act are "sold to the consumer". Some spokesmen held that the sale was completed when the consumer made his selection, and that consequently in a custom-made suit labels need appear only on the samples from which the purchase is made and not upon the completed garment inasmuch as that has been sold to the consumer before it was made. The other side of the argument is that the sale was not completed until final delivery. Even that could be contested, since the consumer is known to return goods.

Of the millions of consumers for whom the new law presumably has been framed, there was only one representative at the hearing, Mrs. R. M. Binder, president of the New York Federation of Women's Clubs, whose statement was, "We express to the FTC our approval of the rules as promulgated." Numerous trade associations were represented and filed briefs.

The brief of the National Association of Wool Manufacturers took issue with FTC's Rule 9 and 15 regarding ornamentation and pointed out that the law permits exclusion of ornamentation if such ornamentation does not exceed 5%. This organization also protested the implication of Rule 17 that makers of luxury products using specialty fibers would have to disclose their blends of these fibers which are in fact jealously guarded trade secrets, and expressed belief that the purpose of the law was met by such a sentence as "100% wool, a blend of camel hair, wool and vicuna." In its Rule 19 the FTC would bring back into the trade the term "virgin" wool, and the N.A.W.M. recommended the deletion of that rule.

The association also recommended the elimination of Rule 24 which provides that no fiber not included in the material shall be named on the label. This rule would complicate the preprinting of tickets covering a normal assortment of mixtures, on which tickets the percentages would later be printed. The association states "To leave certain of the spaces blank and to account for 100% of the fiber content in the remaining spaces could not possibly deceive anybody." The asso-

*(Continued on page 138)*

# Labeling, a Profit Opportunity

By CONSTANCE TALBOT

**THE SITUATION** created by the Wool Labeling Act presents a splendid opportunity to mills, which are now unknown to the consumer, to get their names before the ultimate users of their products at a minimum expense. Some 400,000,000 labels will be brought into being overnight. There will be no profit angle to mills in these labels, unless the mill names appear upon them.

Labels have spelled profit heretofore to mills, cutters, retailers and consumers, but no more than one quarter of the wool products distributed by retailers are at present identified by brands or otherwise. The owners of some of these brands have paid hundreds of thousands of dollars to popularize them. Here is

a chance for the rank-and-file mills for their place in the sun at low cost.

The Federal Trade Commission has issued rulings; associations of every kind are issuing bulletins; the retailer is demanding guarantees—but no one has agreed as yet how the cost of this labeling is to be charged up, or which industry will actually print the greater part of the labels the consumer will see. Yet these labels must soon be printed, and copy must be written, and that copy must add profit at the point of sale.

In all this confusion, the tide may quickly turn to a demand that mills, which know the facts, do the job. More information than just fiber content must appear on these labels, including reasons for the use of re-processed or re-used wool, or for mixtures with other fibers. No one but a textile expert can adequately describe the complexity of wool quality. Only a mill man can make an intelligent statement on manipulated textiles, and say why a particular collection of fibers was used in a particular fabric. The mill's statement, when brought before a hesitant buyer, has a definite authority that often may clinch the sale.

At the moment, every retailer is delighted to think that he has the privilege under the law of removing names and re-issuing information in his own name. This is just talk. Very few retailers are equipped to re-issue information. Perhaps only retailers who admit that they are in inter-State commerce will be permitted to have their names stand alone on the labels. In the marking rooms of most retail stores there is neither time nor equipment nor expense allowance for a labeling job of the magnitude required. It is probable that not over 5% of the labels already on the items when he gets them will be replaced by the retailer.

Manufacturers on their side are not seeking to issue labels with store names upon them, nor will retailers willingly use labels which disclose the garment house or jobber which is their source of supply. Any garment manufacturer who places a mill label on his garments seems to be acting within his rights and few will be removed. Retailers are already familiar with well-known mill names featured on many items in their stock. Recognized by all stores as helpful at the point of sale, are such names as Forstmann, Botany, Pacific, Pepperell, Cannon, Kenwood, Chatham, Skinner, etc. Retailers also know that factual advertising depends on factual labeling. The facts from an Arlington Mills label were recently the basis of a Lord & Taylor advertisement in the rotogravure section of the *New York Times* (March 9).

Mill executives who feel that women may not understand will do well to look a little deeper into the situation. Women shoppers are becoming more and more accustomed to manufacturers' names or brand names in foods, drugs, cosmetics, automobiles, radios, etc. Why should they consider textiles in a different light?

Woolen and worsted mills are facing an important opportunity as a result of the Wool Labeling Act. Will they turn this situation to their advantage, and put an element of profit into what is otherwise a routine duty?

# Knitted Outerwear Convention

**SERIOUS WARNINGS** were sounded at the 23rd annual convention of the National Knitted Outerwear Association held in New York, April 2 and 3.

"We now stand on the threshold of basic and sweeping alterations in our economic life resulting from changes impending in our affairs at home and our relations abroad," Sidney S. Korzenik, executive secretary, said in his annual report. "If the whole world is undergoing so historic an upheaval how can we in our economic affairs and our business relationships with one another expect to escape it?"

"Price inflation is a greater threat for 1941 than it was in 1940," said A. W. Zelomek, economist for the Fairchild Publications, in addressing the outerwear men, "but there are many anti-inflation measures which will be brought into effect. The chances are that moderate advances in the general price level will continue, but that a runaway condition will be avoided for some time, and perhaps for the entire emergency period."

Tribute to the cooperation of textile industry in adapting itself to the needs of Army textile and apparel needs was paid by I. Ruskin Schwartz, in charge of the New York office of the Philadelphia Quartermaster Depot. He summarized recent specification changes to meet present conditions.

Rudolph H. Wyner,
New N. K. O. A. president

Gerard D. Reilly, solicitor, U. S. Department of Labor, in his address, stated that the knitted outerwear industry need not fear any sudden increase in wage rates, and that clarification of learner problems and homework problems related to knitted outerwear industry will soon be taken up.

Part of the session was devoted to the Wool Labeling Act.

Col. Roger Whitman, of the American Hosiery Co., New Britain, Conn., who is now in active army service as assistant corps quartermaster with the Sixth Army Corps, was the retiring president of the association. In recognition of his services, he was named honorary president, the first in the history of the organization. Col. Whitman told the association that the country was facing trying times and business men must be prepared to meet more regulation and control than ever before.

Rudolph H. Wyner, president of Shawmut Woolen Mills, Stoughton, Mass., was elected president of the National Knitted Outerwear Association for the ensuing year, succeeding Col. Whitman.

Irving Saltzman, president of the Premier Knitting Mills, was elected treasurer, succeeding Alex I. Greenhill, while Sidney S. Korzenik was renamed executive secretary and counsel.

Vice-presidents of the association elected were John A. Sand, Jr., succeeding I. B. Davies, and the following, who were re-elected: Abraham H. Liebster, Arthur J. Reinthal, Ben Schanzer and Edgar W. Stewart.

The annual banquet was attended by over 900. Supreme Court Justice Ferdinand Pecora delivered an inspirational address on the present need for sacrifice and courage.

# Bottleneck Unlikely in Cottons

## Situations of scarcity should be only temporary, says Ray Bell; 10-year survey

**THE COTTON-TEXTILE INDUSTRY** has already accepted and is discharging its national responsibility of providing materials in abundance to satisfy all needs—military, naval and civilian, states W. Ray Bell, president of the Association of Cotton Textile Merchants of New York, in this year's survey of "Ten Years of Cotton Textiles." Unless requirements become greatly expanded with new developments, he adds, there should be relatively few situations of more than temporary scarcity.

The accompanying table gives the statistical high-lights of the survey. In submitting these figures, Mr. Bell commented, in part:

"Compared with 1939 activity, the increase in 1940 was above 6%, to a total of about 98,184 million active spindle hours, highest since 1929 and 2,500 million more than 1937. The corresponding production estimate is 9,593,557,000 sq. yds., representing an all-time record for annual production. It is the third year of the past four to exceed the 9 billion mark.

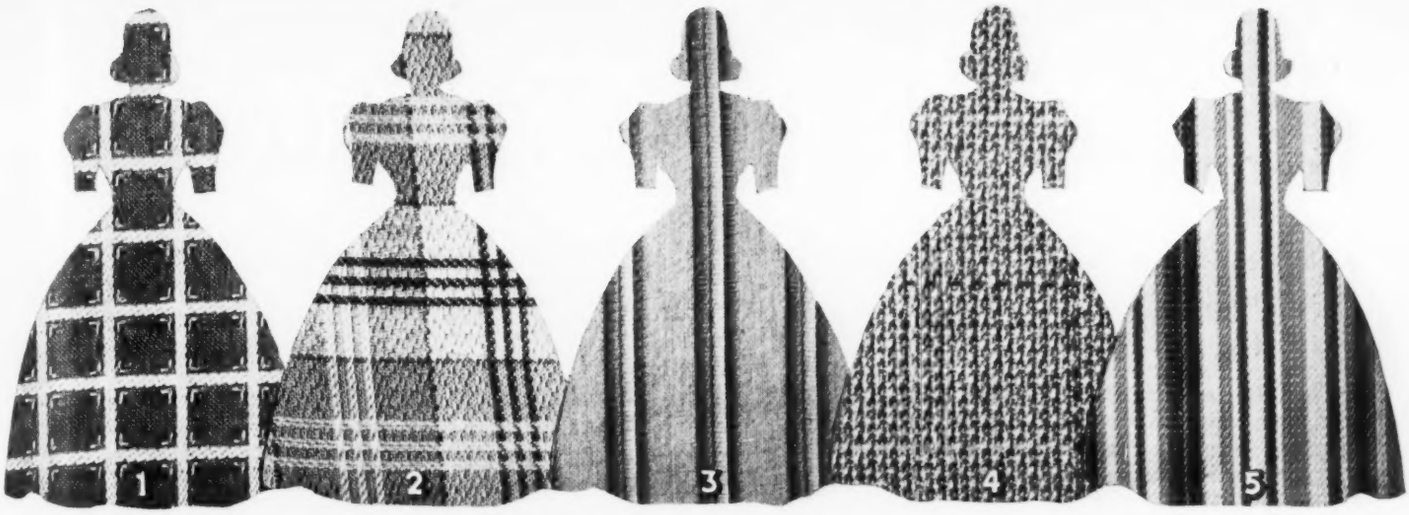
"Cotton consumption also crossed 8 million bales to set a new high peak for any calendar year. Revised estimates indicate that 8,057,000 bales were consumed in 1940 against the previous high of 7,418,000 in 1937 and about 7,370,000 in 1939. This gain of more than 9% over last year, or 687,000 bales, against the lesser increase in mill activity, reflects a larger proportion of heavy yarns used.

"Impressive as are these production statistics for last year, they are likely to be eclipsed by the 1941 performance. Cotton consumption for the first quarter will exceed 2,500,000 bales and spindle hour activity for January alone was more than 9,901 million active spindle hours. These are new records considerably above any previous experience. If this present rate of mill operations can be maintained for the full twelve months, annual figures for the current year could reach the spectacular heights of 9½ to 10 million bales for cotton consumption and over 10½ billion square yards of woven cloth production. . . .

"Against this background of exceptional demand and high production, it is not surprising that the reduction in installed machinery, as measured by spindles in place, was the smallest since 1925 with the single exception of 1934, when new installations also exceeded in number the spindles of the dismantled plants. During the final month, there was an actual net gain of about 34,000 spindles, to keep the total slightly above 24½ million.

"With the production records achieved during 1940, it is no wonder that idle spindleage, meaning equipment which did not operate at all during the year ending July 31, was the lowest since 1923. After adjustment for the spindleage liquidated during the last five months of 1940, it would seem that approximately one million spindles of the present equipment were not able to participate in the urgent activity of the past year. Intermittent spindles, which might be either seasonal or marginal, were approximately this number in 1940 and smallest in our nineteen year record. On this basis, the maximum potential of active spindlenge is now in the neighborhood of 23½ million."

| | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EQUIPMENT | | | | | | | | | | | |
| Spindles in place at beginning of year | 33,608,494 | 32,326,526 | 31,442,174 | 30,938,340 | 30,889,484 | 29,253,444 | 27,700,194 | 26,704,476 | 25,986,620 | 24,943,302 | 24,532,146 |
| Increase or decrease from preceding year | 932,992 | 1,281,968 | 884,352 | 903,834 | 48,856 | 1,636,040 | 1,553,250 | 995,718 | 717,856 | 1,043,318 | 411,156 |
| New installation, additions and replacements | 205,068 | 143,908 | 348,568 | 529,840 | 214,874 | 469,316 | 772,724 | 178,280 | 349,416 | 414,974 | |
| OPERATION | | | | | | | | | | | |
| Spindles active at any time during year ending July 31st | 28,979,646 | 27,271,938 | 26,894,860 | 27,742,462 | 26,700,946 | 24,664,428 | 25,419,110 | 24,774,004 | 23,731,050 | 23,585,938 | |
| Spindles idle during same period | 4,628,848 | 5,014,588 | 4,547,314 | 3,195,878 | 4,188,538 | 4,589,016 | 2,281,084 | 1,930,472 | 2,255,570 | 1,357,364 | |
| Average number of active spindles based on twelve monthly reports | 25,674,107 | 23,250,757 | 24,873,270 | 25,119,435 | 23,421,150 | 23,373,147 | 24,079,936 | 22,042,442 | 22,306,734 | 22,410,483 | |
| Intermittent spindles (being the difference between average active spindles and those active at some time during year) | 3,305,539 | 4,021,181 | 2,021,590 | 2,623,027 | 3,279,796 | 1,291,281 | 1,339,174 | 2,731,562 | 1,424,316 | 1,175,455 | |
| Percentage relation of average active spindles to spindles in place | 76.39% | 71.92% | 79.11% | 81.19% | 75.82% | 79.9% | 86.93% | 82.54% | 85.84% | 89.85% | |
| Spindle hours run | 77,793,298,853 | 70,218,347,911 | 86,580,232,828 | 75,711,412,882 | 76,017,361,934 | 91,773,252,676 | 95,591,131,816 | 75,925,187,178 | 92,559,108,308 | 98,183,985,391 | |
| Hours run per average active spindle | 3,030 | 3,020 | 3,481 | 3,014 | 3,246 | 3,926 | 3,970 | 3,444 | 4,149 | 4,381 | |
| MARKET | | | | | | | | | | | |
| Production in square yards | 6,955,391,000 | 6,278,222,000 | 7,866,040,000 | 6,878,579,000 | 7,135,276,000 | 8,613,837,000 | 9,445,914,000 | 7,502,168,000 | 9,043,966,000 | 9,593,557,000 | |
| Exports in square yards | 366,959,000 | 375,446,000 | 302,042,000 | 226,306,000 | 186,565,000 | 200,501,000 | 236,251,000 | 319,634,000 | 367,466,000 | 357,925,000 | |
| Imports in square yards | 34,732,000 | 29,436,000 | 41,348,000 | 41,533,000 | 63,674,000 | 114,195,000 | 147,320,000 | 58,282,000 | 111,817,000 | 84,344,000 | |
| Available for domestic consumption | 6,623,164,000 | 5,932,212,000 | 7,605,346,000 | 6,693,806,000 | 7,012,385,000 | 8,527,531,000 | 9,356,983,000 | 7,240,816,000 | 8,788,317,000 | 9,319,976,000 | |
| Population at July 1st | 124,113,000 | 124,974,000 | 125,770,000 | 126,626,000 | 127,521,000 | 128,429,000 | 129,257,000 | 130,215,000 | 131,200,000 | 132,000,000 | |
| Available for per capita consumption in square yards | 53.36 | 47.47 | 60.47 | 52.86 | 54.99 | 66.40 | 72.39 | 55.61 | 66.98 | 70.60 | |




# What College Girls Will Wear

## At annual style show sponsored by the textile school of N. C. State College

By T. R. HART
Professor of Weaving and Designing
North Carolina State College

**ANNUALLY SINCE 1928,** the Textile School of North Carolina State College, in cooperation with the home economics departments of North Carolina colleges for women, has conducted a style show in an endeavor to create consumer interest in cotton and rayon products. This style show has become one of the outstanding events of the college year and it attracts many visitors.

This year, samples of over 300 fabrics designed and woven at State College by textile students were sent to the ten cooperating institutions. Patterns which appealed to them were selected by 160 young women, who, as a part of their classroom work in home economics, will design and make costumes which they will model at the 14th annual style show which will be held at North Carolina State College, in Raleigh, on April 24.

Textile officials are cordially invited to attend the style show and also the 22nd annual Students' Textile Exposition which will be held on the same day, so they can see the caliber of work done by the textile students.

Five of this year's more popular fabrics are shown and described on this page. Four are all-cotton, and one is spun rayon and wool.

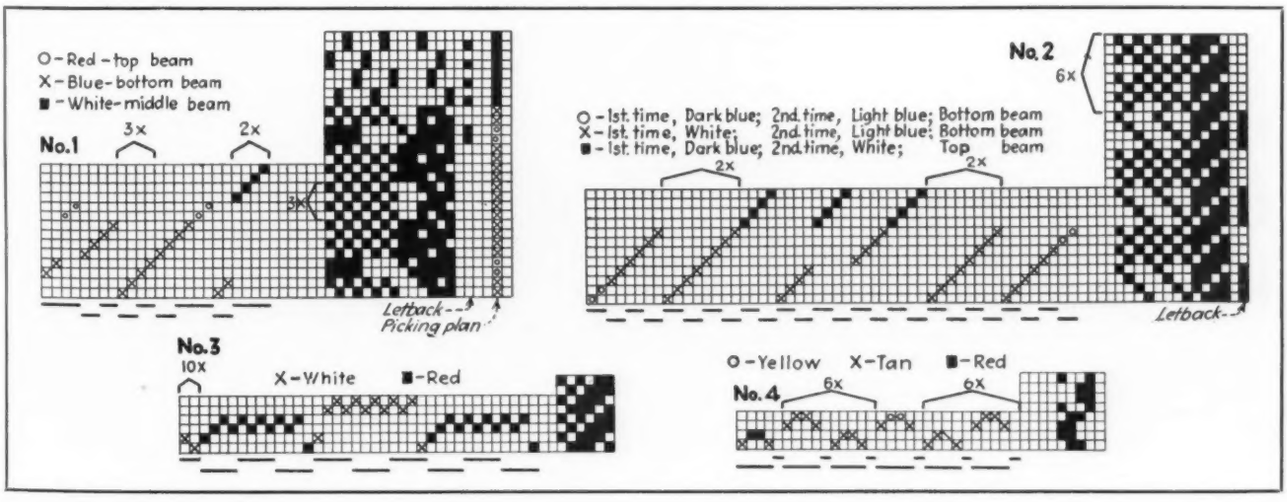
No. 1. Cotton novelty check; blue, red, and white warp and filling yarns, all 60/2; 83x74 overall, 32 reed, 64 pick gear. Picking plan—2 blue, 2 red, 20 blue, 2 red, 2 blue, 8 white.

No. 2. Fancy cotton check, granite weave ground, twill stripe overcheck; 68x68 overall, 32 reed, 60/2 warp and filling; picking plan—2 dk. blue, 22 white, 4 dk. blue, 4 white, 4 dk. blue, 4 white, 4 dk. blue, 22 white, 2 dk. blue, 24 lt. blue, 4 white, 4 lt. blue, 4 white, 4 lt. blue, 4 white, 24 lt. blue.

No. 3. Striped cotton pique; red and white warp, white filling; 100x68 overall, 32 reed, 60/2 warp and filling.

No. 4. Spun rayon and wool suiting, 4x4 mock leno weave; tan spun rayon and wool, red cotton, and yellow cotton warp and filling yarns, all 26/2; 54x60, 12 reed; picking plan—50 tan, 2 red, 50 tan, 2 yellow.

No. 5. Fancy cotton stripe, 4-harness broken warp twill; filling is white, warp colors are black, white, green, red, and light blue; 60/2 yarns warp and filling, 100x76 construction.



# Georgia Textile Operating Executives

## Hear Hugh Comer; discuss carding and spinning problems at spring meeting

**CARDING AND SPINNING PROBLEMS** were discussed by over 300 members of Textile Operating Executives of Georgia at its spring meeting, held last month, in Atlanta, Ga. General chairman George E. Glenn, superintendent, Pepperell Mfg. Co., Lindale, Ga., presided over the meeting. Julian M. Longley, agent, American Thread Co., Dalton, Ga., led the carding session. J. Hal Daughdrill, general superintendent, Callaway Mills, LaGrange, Ga., was in charge of spinning.

Feature speaker of the meeting was Hugh Comer, executive vice-president of Avondale Mills, Sylacauga, Ala., who told the group of personal and business experiences while in South America. "Due to abnormal war conditions it is possible to sell an increasing quantity of goods, especially machinery, to South America," he said, "but after the war opportunities will be negligible because of high domestic tariffs and European competition."

Mr. Glenn opened the carding session by asking for a discussion of automatic lap-release devices for pickers. Consensus was that these attachments increase efficiency and prevent chewing-up of laps, provided they are so adjusted that the cotton does not bank up behind the calender rolls and cause thick and thin places. The lap-release arrangements momentarily stop the calender rolls while the lap is being ejected.

Plough grinding of card cylinders and doffers should not be done more than once during the life of the clothing, it was suggested, but a light grinding may be needed six times a year. A member reported that he grinds with a coarse emery fillet operating at 800 r.p.m.; grinding interval is 360 hr. A No. 7 emery fillet gives some plough-grinding effect when used lightly at high speeds.

Several members said that they have satisfactorily applied compression springs to card calender rolls in order to get more sliver in the can. One member reported that with the compression spring and a smaller tube in the coiler he gets 30% more sliver in the can; without the spring, but with the tube, he gets 20% more in the can. Another mill man mentioned that by alternating the direction of the can, it is possible to get more sliver inside because of the additional pressure which is applied to the sliver without damage. Use of 12-in. cans on 10-in. coiler heads was reported as being another method of getting additional sliver in the cans. This system gives a cross-over effect, which fills up the hole in the middle of the sliver, but was not recommended because of damage to the sliver.

Several members said that they have successfully plugged the hole in card trumpets and rebored it in a different size. Cast-iron was used in some instances, and electric-welded bronze in others. The most popular method appeared to be to bore a cone-shaped hole to within 1/8-in. of the surface, and finish up with a straight tube in order to prevent an accumulation of cotton at the bottom of the cone.

Pieces made at the back of long-draft roving frames were reported to be creeled at random in some mills, whereas in other mills the pieces are saved until there is a can full, which is doubled back through the drawing. Splicings made on long-draft speeders were said to cause ends down in spinning.

General chairman, George E. Glenn, superintendent Pepperell Mfg. Co., Lindale, Ga., presided

In changing from multi-process to one-process roving, several members reported a loss of 7 or 8% production because of the additional twist which long-draft roving requires. In opposition to this, other members asserted that production was approximately the same, because of better-running work and fewer stops on the one-process equipment. It was agreed that the product made on the one-process system is as good or better than that made on the multi-process system.

**OPENING THE SPINNING SESSION,** Mr. Longley asked how lift rods should be oiled. Several members reported that they do not oil them at all, but keep them wiped clean. Others reported the use of lard oil. Oiling intervals were said to range from once to twice a week, depending on hours of operation. A member told of an instance when a new overseer in the mill thoroughly cleaned the lift rods, which in the past always had been oiled; he has put no oil on them for the last four years, and they have given excellent service. It was pointed out that in cleaning lift rods the rail should be taken off so that a thorough job can be done.

There was a wide difference of opinion as to whether ring life is longer on filling than on warp wind. One member reported that he has a mill on warp wind and a mill on filling wind, and that the rings last almost the same length of time in each mill. Several other members, however, reported that the rings wear faster on warp because of the longer stroke and additional tension.

Consensus was that it usually is more economical to buy new rings than to have old ones reworked. Doffers are prevented from turning rings over, according to one member, by buying rings with only one side finished. When the top is worn out, the ring is sent back and the other side is finished. The second side lasts as long as the first side. Aside from this case, consensus generally was that a reworked ring

lasts only about 40% as long as a new ring.

It was agreed that the use of cold-rolled steel arbors is not practical because the friction is so great that the front rollers are difficult to start up which causes end breakage. Use of cast-iron rollers will eliminate this trouble.

Several different methods were suggested for handling yarn between spinning and spooling, depending on the layout of the mill. In one mill, with both processes on the same floor, large trucks are kept in the cross alleys and left there until fifteen boxes have been put on the bed of the truck. The loaded truck is then pushed to the other end of the room, after which it is used to return empty boxes and cans. The boxes fit on the smaller trucks, as well as the large trucks. Conveyor systems were reported in some instances as being used for this handling.

The use of neats-foot oil was said to overcome cracking of certain kinds of long-draft aprons or cots, but the preferred practice is to purchase pretreated aprons if they are needed. Oil

Hugh Comer, executive vice-president Avondale Mills, Sylacauga, Ala., told of his experiences in South America

applied in the mill is put on with a small brush, and the machine is run for 2 hr. to work the oil into the apron.

There was considerable difference of opinion as to the advantage of changing from warp wind to combination wind. In spooling, combination wind tends to slough off the bobbin, it was reported, especially with the coarser numbers. A member reported that the use of a two-point cam on a warp frame spinning 13s to 20s retarded this sloughing off.

Most members said that they operate combination wind at relatively low speeds, but one member asserted that he is running a machine at 1,300 yd. per min. on 21s to 30s with good results. He uses an 8-in. bobbin containing around 3,600 yd. of yarn, a 5-in. stroke, 2¼-in. taper, and gets 3½ to 4 oz. of yarn on the bobbin. Several members declared that changing from warp to combination wind causes trouble in weaving.

Seth A. T. Newsome, superintendent of Unity and Oakleaf plants of Callaway Mills, LaGrange, Ga., was elected to the executive committee to succeed Mr. Daughdrill whose term expired.

# Textile Test Methods Improved

## Progress in standardization made by Committee D13 at Washington meeting

**A SYMPOSIUM ON COLOR,** co-sponsored by the Inter-Society Color Council and the American Society for Testing Materials was the outstanding feature of the Spring meeting of the latter organization, held March 3 to 7, in Washington, D. C. A lot of hard spade-work at subcommittee meetings of Committee D13 resulted in several recommendations for changes and improvements in textile test methods and specifications. Sessions were held by eleven subcommittees.

One of the more important recommendations was that the tentative method of testing wool and part wool fabrics be revised to conform with the Wool Labeling Act. These revisions would consist chiefly of the inclusion in the specification of the terms for wool, reprocessed wool, reused wool, etc., as defined by the act; in addition, it was recommended that the paragraph of the present specification relating to tolerances for wool content be revised to conform with the act.

Another important suggestion was that Committee D13 adopt as a tentative standard the Worth Street Rules covering specifications for fine fancy goods and cotton and synthetic-yarn mixtures, and for fine staple gray goods. It was suggested that the specification covering goods sold for rubber and pyroxlin coating be revised to include a wider range of fabrics than at present, provided the trade agrees on the additions proposed.

Subcommittee B-4 on bleaching, dyeing, and finishing recommended that work be undertaken dealing with the effect of finishing materials on the human skin, such work to be carried out in cooperation with other interested groups.

This subcommittee also proposed several revisions in the tentative method adopted last year for testing resistance of textile fabrics and yarns to moths, and reported progress in the development of methods of testing materials for increasing resistance of textiles to moths.

Still another important matter considered was a new recommended practice for the description of yarn construction. The practice suggested provides for use of numbers and symbols to describe the construction of any type of yarn.

The subcommittee investigating glass fiber and its products decided to undertake a study of the essential properties of sizing for glass yarn, including the preparation of methods of testing. This subcommittee is also investigating the properties of glass sliver for wire insulation and for use as filler, is studying methods for testing resistance to abrasion of glass yarn and fabrics, and is developing a test for contraction of glass yarn due to twist.

Six papers were presented at the symposium on color, all of which were of general, but not specific, interest to textile men.

# Controller Upkeep

## Maintenance schedule is aid in keeping the mill's nervous system in tune

By J. R. WRATHALL

Control Engineer, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

**MOST SOURCES OF TROUBLE** in electrical control equipment are well known and, with reasonable care, can be largely overcome or completely eliminated. If these more common causes of failures are taken care of, shut-downs will be few in number and, for the most part, caused by some unforeseen or unexpected condition peculiar to the installation. With the decrease of outages due to increased care, it will also be found that controller equipment will remain serviceable over longer periods of time and will decrease the costs for replacement equipment.

Of the more common causes contributing to controller trouble, dust and lint are among the most important. By collecting across insulating surfaces, the dust in opening and picking rooms may establish false circuits and cause erratic control operation, or it may cause short circuits resulting in shutdown. Lint accumulations on controls in carding and spinning rooms may absorb sufficient moisture to cause serious trouble. Dust and lint may collect in pivots of moving parts, causing sluggish operation because of increased friction, and in some instances may prevent the operation of equipment used infrequently. Occasionally accumulations of these substances form magnetic paths in air gaps of relays and contactors, causing residual sticking, which may in turn result in serious trouble.

All controllers exposed to dust and lint should be periodically blown out with air to forestall their accumulation in sufficient amounts to cause serious trouble. In those installations subject to excessive dust or lint which cannot be cleaned periodically, the controller inclosures should be dust-tight. Dust and lint accumulations on contactors and relays are in some cases due to use of lubricants on the moving parts. Since lubricants are not needed on these devices for their proper operation, they should be avoided, particularly in dusty locations.

Another source of control trouble is due to the presence in the air of moisture or acid and other chemical fumes, as on washing or dyeing ranges. Moisture causes rust; its presence impairs the operation of control parts, and, in installations of seldom-used equipment, may become so far advanced as to interfere with relay or contactor operations. Alkali and acid fumes also oxidize various metals; therefore, if vital parts are left unprotected they may rapidly deteriorate. On copper contact surfaces oxidation forms a nonconducting film which, if left for some time, may prevent the making of a circuit when a relay or contactor operates and may be the cause of considerable lost time before it is found.

Controllers subjected to moisture and fumes should be inspected at intervals and freed of rust and other oxides which may have formed. This is especially desirable on infrequently used equipment. Paint can be used to advantage on many parts to prevent the formation of oxides. In some installations moisture and fumes should be prevented from reaching the equipment by inclosing it in suitable cabinets, or by placing the controller at a remote location and using a weather-proof pushbutton at the control point. This is especially true when the location is adjacent to or above acid vats or other similar sources of destructive chemical fumes.

Spring tension on contacts of frequently operated control devices should be tested monthly

Some controllers in textile plants are applied to machines having operating parts which produce shock and vibration. In most instances the controller is either mounted on the machine or adjacent to it and is subjected to the same vibration and shock as the machine; or the vibration at the controller may be amplified by the method of mounting. This arrangement creates a constant source of potential trouble due to controller failures and loose connections. Controllers subjected to vibration need the same consideration as the machine in keeping parts tight and in working order. Looseness of the various parts can be readily determined by inspection. Vibration may also cause overheating at the contact surfaces because of the effective increase in contact resistance; this leads to burning and short contact life.

Vibration is the primary cause of loose connections resulting in erratic and uncertain controller operation. A loose connection is difficult to find, especially when the circuits are somewhat involved; and it may cause considerable loss of time. All connections to vibrating equipment should be tightly made and periodically inspected. Leads between fixed structures and the vibrating machine should not be drawn tight or trouble will quickly develop.

The primary function of various control devices is to open or to close electrical circuits. In performing this function the contact units are subject to any burning that occurs when the contacts part and the arc is broken. This is a destructive action that becomes evident in the wearing down of the contact tips, the rate of wear depending on the number of operations and the severity of the arc to be broken. Because of the wear on these vital parts, they are designed for accessibility and easy replacement. It is not essential, however, that the tips be smooth and unmarked, providing the contact surface is clean and has ample material to insure proper contact pressure. Excessive wear reduces the contact pressure; bad contact surfaces materially reduce the contact area; both result in overheating of the contacts. If the conditions are allowed to become progressively worse, the contact tips sometimes become so hot that the metal fuses and welds the contacts together. Welding of contacts creates a serious situation, because it often means that a machine does not stop when it should.

Overheated contacts may cause the

contact spring to become weakened to such an extent that, even with apparently good replacement contact tips, overheating still results. For this reason, it is well to know the desired contact pressures required for various control units so that they can be checked if necessary.

All the more common causes of controller troubles discussed above can be forestalled by periodic inspections and the proper protective measures. In some instances, however, the cause of difficulties will not necessarily be as given, even though they have all the characteristics of a mechanical fault. A good example would be overheated contacts caused by a low voltage condition and not by defective contact tips or by a weak contact spring. This is but one of the many possible sources of trouble due to electrical rather than mechanical faults. Among the contributing causes for electrical troubles are conditions resulting from shorts, grounds, overloads, low power factor, and low voltage. Any one or a combination of these causes can result in costly delays and shut-downs.

Some of these electrical troubles, notably short circuits, grounds, and overloads may be cause by mechanical faults; but, like the others, they cannot readily be detected by visual inspections and observations. However, if any of these electrical conditions exist, they can be readily found by the use of indicating instruments.

To cope with the electrical faults which may arise, the maintenance man should be provided with a set of indicating instruments, and he should also have a working knowledge of how to use them. On alternating equipment the instruments should include an ammeter, voltmeter, wattmeter, and a power-factor meter. These instruments should be selected with auxiliary devices, such as transformers, to permit their use on the various control and motor installations in the plant. On direct currents a voltmeter and ammeter with suitable calibrated resistors and shunts are necessary.

A convenient combination of the required instruments for trouble work are included in the so-called industrial analyzers which are rapidly gaining in popularity for maintenance work. These compact units include the necessary instruments, and their adjusting devices to adapt them to the wide range of testing and checking required in the average textile plant. A similar analyzer is made for use on direct-current circuits.

To minimize production shut-downs because of controller failures resulting from the faults noted above will require a maintenance program or schedule. This can be worked out to meet the needs of the plant and its equipment, and will be largely based on the type of apparatus used and the conditions under which it must operate. The daily program of looking for trouble is the best method of avoiding it. In looking for trouble, attention should be given to details and all control devices checked as the schedule dictates. If such a schedule as set up and rigidly followed, trouble from the mill's nervous system will be kept at a minimum.

## DIAGNOSIS CHART FOR CONTROLLER AILMENTS

The following tabulations list most of the sources of controller difficulties and will serve as an index in checking possible sources of trouble. Under each heading the items are listed in the approximate order of their importance.

**CONTROLLER OR CONTROL DEVICES WILL NOT OPERATE**

A. Overload relay contacts latched in open position
B. No power available at control terminals
C. Low voltage
D. Relay or interlock contacts not properly made
E. Loose connections at terminal block
F. Open connection or terminal block or in the external connections
G. Defective relay or contactor coil

**SLUGGISH OPERATION**

A. Low voltage
B. Excessive friction due to misalignment of parts
C. Sticky moving parts
D. Corroded or rusted parts

**ERRATIC OPERATION**

A. Loose connections
B. Grounds
C. Short circuits
D. Sneak circuits

**OVERHEATED COILS**

A. Inadequate ventilation
B. Excessive ambient temperature
C. High voltage
D. Part of coil shorted
E. Armature gap held open by interference between moving and stationary parts, rust, dirt, or other foreign material

**OVERHEATED CONTACTS**

A. Contacts worn down too far resulting in inadequate spring pressure
B. Rough pitted contacts resulting in small contact area
C. Contacts overloaded
D. High ambient temperature
E. Continuous vibration resulting in a relative high effective contact resistance
F. Oxidized contacts resulting in high contact resistance

**WELDED CONTACTS**

A. Overloaded contacts resulting from a false or short circuit.
B. Bouncing contacts due to weak contact spring
C. Repeated rapid touching of contacts without pressure
D. Low contact pressure

**CONTROL DEVICES DO NOT OPEN**

A. Grounds or short circuits by-pass stop circuits
B. Mechanical interference between moving and stationary parts
C. Welded contacts
D. Magnetic sticking (rare)

## Suggested Maintenance Schedule for Control Equipment Based on Conditions in an Average Plant

**DAILY**

A. Check indicating and safety devices to make certain that they are functioning properly

**MONTHLY**

A. Carefully inspect, and observe operation of, all controllers
B. Check individual safety devices, such as overload relays and trip mechanisms
C. Remove visible dirt and foreign material by blowing out control and wiping away oil and dirt accumulations
D. Check wear and general condition of current-carrying contact tips and renew those in need of replacement
E. On infrequently used equipment remove oxides from contact surfaces
F. Examine connections to all controllers subjected to vibrations

**ANNUALLY**

A. Examine all terminal connections
B. Test all indicating and recording instruments
C. Inspect wiring system for corroded or loose connections
D. Examine all push-button and master-switch contacts
E. Check oil in all oil-filled controllers

# Crepe-de-Chine Hosiery Yarn

## New construction improves appearance and increases life of silk stockings

**Several developments designed to improve silk hosiery, and thereby to preserve for silk at least a part of its last stronghold, have followed the introduction of Nylon to the full-fashioned hosiery industry. One of the most interesting of these is the recently announced crepe-de-chine hosiery yarn. The following article describing the construction and properties of this new yarn was written for TEXTILE WORLD by one of the men who was instrumental in its development.**

**IN THE FEW MONTHS** since its first introduction by Georgetown Silk Co., crepe-de-chine hosiery yarn has found an important place in the knitting industry. Already 34 knitting mills are producing crepe-de-chine hosiery at a production rate of at least 3,000,000 doz. pairs annually. Most people are familiar with woven crepe-de-chine broad goods, but little has been heard of crepe-de-chine hosiery prior to this year.

First, let us consider what constitutes a crepe-de-chine yarn construction. At present there is being marketed, as crepe-de-chine hosiery yarns, chiefly 3-thread yarns with 50 turns inserted twist and 4-thread yarns with 40 turns inserted twist. According to most authorities these constructions may properly be called "crepe-de-chine." Some people feel that these yarns should merely be called "crepe." However, most prefer "crepe-de-chine," either because of the usual yarn definitions or to provide a demarkation between these new high-ply twisted yarns and the older initial-and-final twisted yarns used in knitting what has formerly been called "crepe" hosiery.

Why is it that a 3-thread yarn with 50 turns of inserted ply twist has not previously been used in the hosiery? Not because the possibilities of such a yarn were not recognized, but rather because repeated efforts to produce a practical 3-thread knitting yarn with much more than 37 turns of inserted ply twist have failed. Silk has a high degree of resiliency, which causes a twisted silk yarn to tend to untwist. As improvements have been made in the art of twist setting, yarns with higher and higher effective twist have become practical for knitting purposes; but, regardless of twist-setting methods used, until recently it has not been possible to produce a practical 3-thread with more than 37 turns of inserted ply twist. Yarns of higher twist invariably had excessive torsion or tendency to untwist, which caused difficulties in throwing, kinking in knitting, and twisting of the finished hosiery.

The newly developed throwing methods, which control the tendency of highly twisted yarn to untwist, have made possible the production of practical crepe-de-chine hosiery yarns and have opened an entirely new field of yarn constructions to the hosiery industry. Yarns of high final twist have been common in the hosiery industry, but such yarns have had a considerable amount of initial or single-end twist in the opposite direction from the final twist. This single-end twist served the purpose of controlling the tendency of the yarn to untwist, but at the same time reduced the benefits of the high final twist, as a result of the removal of all or part of the opposite single-end twist when the final twist was inserted.

It must be remembered that with a ply twist, not only do the threads wrap around each other, but each individual thread turns on its own axis exactly as many times as the group turns about the group axis. Thus, when three ends of no-twist silk are doubled and twisted 50 turns, the completed yarn has 50 turns in each of three single threads, or a total of 150 single-end turns plus the 50 turns of ply twist—a grand total of 200 turns. In this illustration the 50 turns of ply twist is the inserted twist, and the 200 turns of the actual twist in the completed yarn is the effective twist.

**EFFECTIVE TWIST.** It is the effective twist, or actual twist, in the completed yarn that governs the sheerness, snag resistance, dullness, strength, and elasticity of hosiery knit therefrom. The inserted twist or the number of turns of twisting required to produce a yarn affect the finished yarn only to the extent to which the inserted twist produces effective twist. It has been pointed out that a 3-thread with 50 turns of inserted twist has 200 turns of effective twist. Contrast, for example, such a yarn with a 3-thread yarn with 12½ turns in each single end and 12½ turns of opposite ply twist.

The latter yarn has a total of 50 turns of inserted twist, but only 12½ turns of effective twist; that is, the completed yarn has no twist in the single ends and only 12½ turns of ply twist. It can readily be understood that such a yarn cannot be favorably compared with the crepe-de-chine yarn.

It is generally recognized that silk hosiery still possesses certain desirable characteristics, such as fit, moisture absorption, insulation qualities, hand, and comfort, which have not as yet been duplicated in hosiery of any other material; but it is also generally recognized that these features alone are not sufficient to influence the consumer, unless wearing quality and appearance are improved.

Crepe-de-chine yarn, having substantially more effective twist than ordinary silk hosiery yarns, improves the appearance of silk hosiery from the standpoint of sheerness and dullness, and increases the wearing life, due to greater snag resistance, strength, and elasticity.

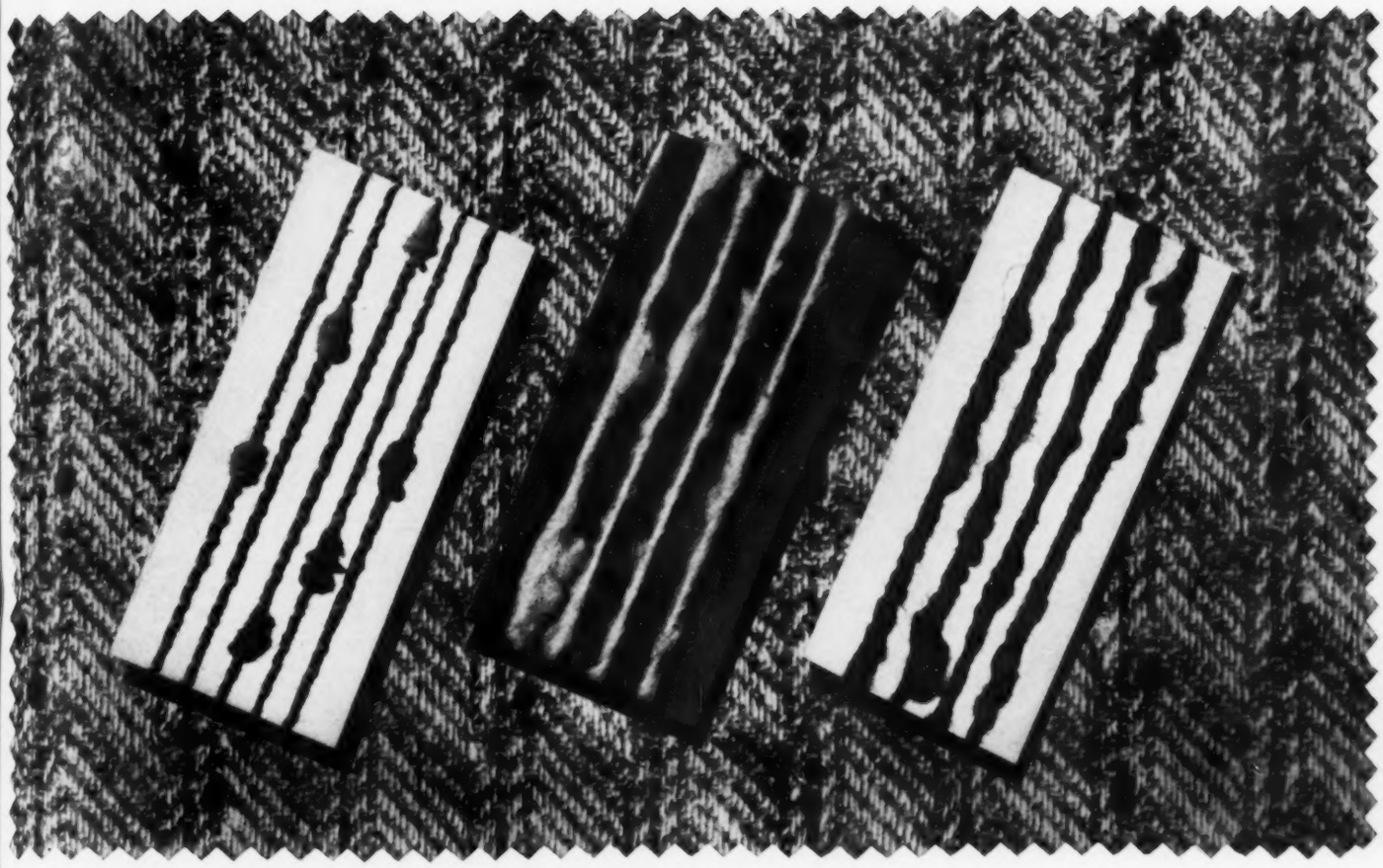
According to Georgetown Silk Co., these improvements are due to the following reasons:

*Sheerness.* Conventional crepe twists are greater in diameter than one-way twisted yarns of the same final twist. This is due to the fact that the one-way twisted yarn has much more twist in each single end after all twisting is completed; and the more the twist in a given yarn, the more compact it becomes.

*Permanent dullness.* Crepe-de-chine is duller than any "crepe" with the same final twist, because the single-end twist after all twisting is completed is greater, which increases the number of shadows.

*Snag resistance.* Due to the greater amount of single-end twist after all twisting is completed, crepe-de-chine is substantially more snag resistant.

*Strength of knitted fabric.* An increase of twist in a one-way twisted yarn increases the loop-strength of the yarn and the bursting strength of the knitted hosiery.



# Novelty Yarns Always Popular

## Nubs, bunches, and flakes in yarns make woolens more interesting and salable

By JOHN R. DUNN

**THE VARIETY** of novelty yarns that can be made by altering the amount of twist and draft, and by combining yarns, runs into thousands. By combining two or more of these yarns in one fabric, an unlimited number of effects can be obtained. Hence, knowledge of their methods of manufacture should be of practical value to all mills. Some mills are capable of turning out the most complicated of novelty yarns, being equipped with twisters having three sets of feed rolls, with controls for intermittent motion. However, mills that have twisters equipped with two sets of feed rolls, with intermittent motion, can successfully turn out a satisfactory number of novelty yarns. This is because, although the number of novelty yarns that can be made runs into a large figure, the majority of them are derivations or combinations of the more simple types. For example, nub or bourette yarns can be varied as regards the size of the bunch or winding made, and as to the distance between bunches. Also nubs or two or three different colors may be placed on the same core yarn.

No definite rule can be given on the production of particular styles of novelty yarns. It is only by experimentation and trial that the proper amount of speed and twist can be determined, and the correct pattern chain built. But useful suggestions can be given as regards general methods of production.

Novelty yarns made by use of nubs, slugs, etc., always retain their popularity. The effect that nub yarns have on the fabric depends on the material out of which the nub has been made, the processes to which it has been subjected in its formation, and the method in which it has been placed in the yarn. Nubs may be successfully made from noils or burr waste. The length and fineness of the fibers, and the method in which they are made, determine their size and shape. A round nub can be made by running noils through a breaker card from which the comb has been removed. The breaker will soon fill up with stock and the nub will be formed between the workers and the cylinder, and the doffer and the cylinder. The size of the nub is regulated by the distance from the cylinder the workers and doffers are set.

If hard nubs are required, the nubs from the card can be placed in a barrel which has a revolving cylinder fitted with spikes which carry the nubs around. A thin soap emulsion is added and the nubs are left in the barrel until they are of the desired hardness.

When irregularly shaped nubs are desired, they can be made by placing the nub stock itself directly into the barrel, with enough soap emulsion

added so that the material is thoroughly soaked. The size of this style of nub can be regulated by running the stock through a picker, in this way breaking it up to the required fineness. Nubs of this type are sometimes called slugs.

To obtain even distribution of nubs in the stock for the yarn proper, a practical method is to lay them with a batch in the picker room. Methods are also sometimes used which place the nubs in during carding. This has the advantage of making the nubs show up more prominently in the fabric, but they are likely to be bunched and uneven, and not so firmly fixed in the roving.

In carding, nubs must be considered as low stocks and a loss must be expected. However, if the adjustments of the card are carefully checked, this loss can be reduced to a minimum. It is necessary, when carding stock containing nubs, so to set the card off that the nubs will not be carded out so much that they do not have the required prominence in the fabric. This can be done by placing thin pieces of leather between worker boxes and poppet heads.

The size and hardness of the nubs, and the prominence with which they must show up in the fabric, will control the amount of carding they can receive. The more a nub can be carded out, the more carding the stock itself will receive; and consequently the stronger the yarn will be. Soft nubs do not do as much damage to the card clothing as hard nubs, but the card must be set off more when soft nubs are run, to prevent them from being completely carded out. Hence, a good grade of stock is usually necessary when using soft nubs. Enough workers on the first breaker should be left at their regular setting to insure the nubs being opened out or fringed sufficiently that their fibers will become amalgamated with the stock used for the yarn proper. This will aid in preventing them from falling under the card. The doffers of the card should be kept sharp, so they will hold the nubs when the latter are placed on them by the cylinder. This is the point where most of the loss of nubs occurs.

**BY SLIGHT ALTERATIONS** and adjustments in the card room, numerous other styles of yarn can be created. Bunch yarns are made by several methods. One or more workers on the finisher can be controlled separately by a segment gear, so that they will start and stop intermittently, thus collecting more stock on the workers in places, and causing the yarn to be lumpy. Or, wires may be pulled out in streaks across the workers; this will achieve the same result.

Placing thin steels under the rings of the ring doffers will cause a similar appearance in the yarn. These steels are from 1/32 to 3/32 in. in thickness, and 3/8 to 5/8 in. in width. They are placed at intervals under the rings and across the doffers, raising the wire at these points. This results in high spots on the rings, which take up more stock, thus forming bunches or slubs in the roving. This style of bunch yarn is often combined with nub yarns.

Flake yarns can be made by use of a spool-holding device fastened over the last workers of the finisher. This is equipped with an intermittent motion that permits one or more spools of different colored rovings to be fed to the cylinder of the finisher at intervals, thus causing flakes to appear in the roving. These flakes will not be blended or firmly fixed in the roving; the twist placed in later is necessary to hold them securely in place.

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# Setting the Shear

## Important in finishing automobile fabrics

By JAMES H. STONE

**THE MOST IMPORTANT FACTOR** in shearing automobile fabrics is, of course, the setting of the shear. There are, however, several other factors which must be taken into consideration if one is to obtain satisfactory results in finishing and, at the same time, keep costs at a minimum.

First, the cloth coming to the dry-finishing department should be in proper condition. If a fabric contains cotton and is specky, it should be speck dyed so as to obviate specking in dry finishing. For the same reason, if a wool fabric contains specks or burrs, it should be carbonized.

After drying, every piece should be pulled over a perch and given a careful inspection so that all defects can be caught and remedied before the pieces are sheared. At the perch, pieces of the same style should be sewn end to end and piled on trucks, with as many pieces as possible to a truck. This procedure reduces the length of time which the shears will have to be stopped for the shear men to sew seams.

For shearing automobile fabrics, one run over a three-cylinder shear usually will be sufficient. Two cylinders shear the face, and one cylinder shears the back. Speed of the shear ranges from 24 to 35 yd. per min., depending on the fabric. A typical setting for producing a face finish on 18- or 19-oz. fabrics is as follows: First set the shear cylinder so that it will turn fairly freely against the ledger blade; this should permit a piece of tissue paper to be cut cleanly without any drag. Next set the ledger blade 0.01 in. higher than the rest plate or bed. Then set the first cylinder at a distance of two papers between the cloth and the ledger blade. Set the second cylinder at a distance of four papers to shear the back of the fabric. Set the third cylinder the same as the first. Remove the vibrators from the third cylinder. Adjust speed of shear to 28 yd. per min.

Different types of fabrics and different finishes will require somewhat different settings. For example, on lighter fabrics, leave the vibrators on all three cylinders and set the ledger blades at the same height as the rest bed. Again, some fabrics which must be closely sheared may require two runs with a closer setting on the second run than on the first.

Check frequently to make sure the shear tender is keeping his cylinders and swabs well oiled, but is not using so much oil that some will run onto the cloth. A static eliminator should be installed at the delivery end of the shear were the cloth leaves the machine and is folded on a truck. This will prevent winding of cloth in the folder and attraction and clinging together of cloth coming from the folder and that coming off the shear. If a regular static eliminator is not available, a piece of steel wire strung across the shear near the back of the cloth and grounded to a water pipe may serve the purpose.

After shearing, the cloth is run at a speed of 28 to 30 yd. per min. through a dewing machine, conditioning machine, and press, and is again piled on trucks. The pieces are then inspected on a perch, measured, weighed, and wrapped for shipping.

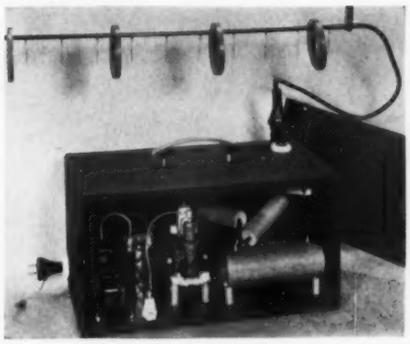
# TEXTILE EQUIPMENT NEWS

## Cotton Looms

Draper Corp., Hopedale, Mass., has announced two new X-family looms. Both are heavier looms designed to operate at higher speeds with greater efficiency. The X-2 loom weighs nearly 200 lb. more than the regular X-Model loom of the same width. Loomsides, breastbeam, and girts have been strengthened, and a 4-bolt hopper stand with a wide foot has been added. Greater shuttle control is said to be possible through a new adjustable checking arrangement and formed shuttle box equipment. Let-off can be either a strengthened Roper, or a Bartlett type; 26-in. diameter warp beams can be accommodated.

The XU Model loom for medium ducks has massive loomsides and five heavy cross members built into a single rigid structural unit, and is built to run 20% faster than previous duck looms. Operating parts have been designed in weight and strength comparable to the frame. Direction of movement of the take-up roll is reversed, permitting the cloth to be wrapped farther around the roll to prevent slipping; cloth is kept under proper tension by being pulled over the polished breast beam. Large drag rolls located above the warp line permit use of 26-in. warp beams; a depressor bar prevents lifting strain on the warp stop motion.

Both the new looms were demonstrated in the exhibit of Draper Corp. at the recent Southern Textile Exposition, Greenville, S. C.



Static eliminator (Simco)

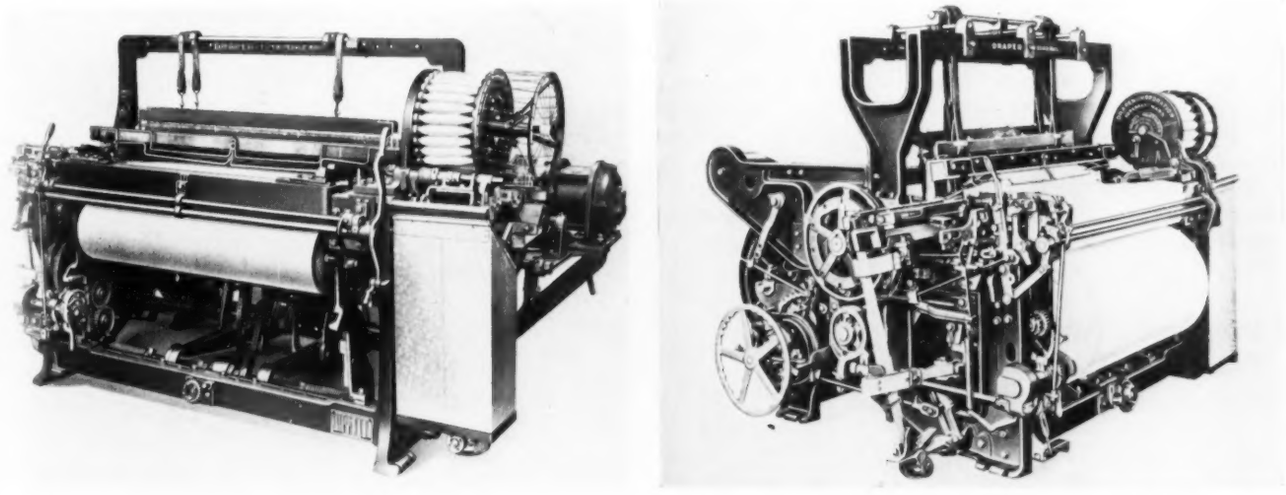
## Static Eliminator

For eliminating static, the Simco Co., 4929 York Rd., Philadelphia, has recently announced the Simco Ionizer. This device utilizes a new method of electrically propelling static charges out into space. A static field is produced equivalent to that of 100,000 volts or more direct current, and only a few thousand volts are generated by the Ionizer to accomplish this. As an example of the textile applications of the Ionizer, it is stated that on winders in throwing mills, static charges in acetate yarn may be destroyed at almost the instant they are generated.

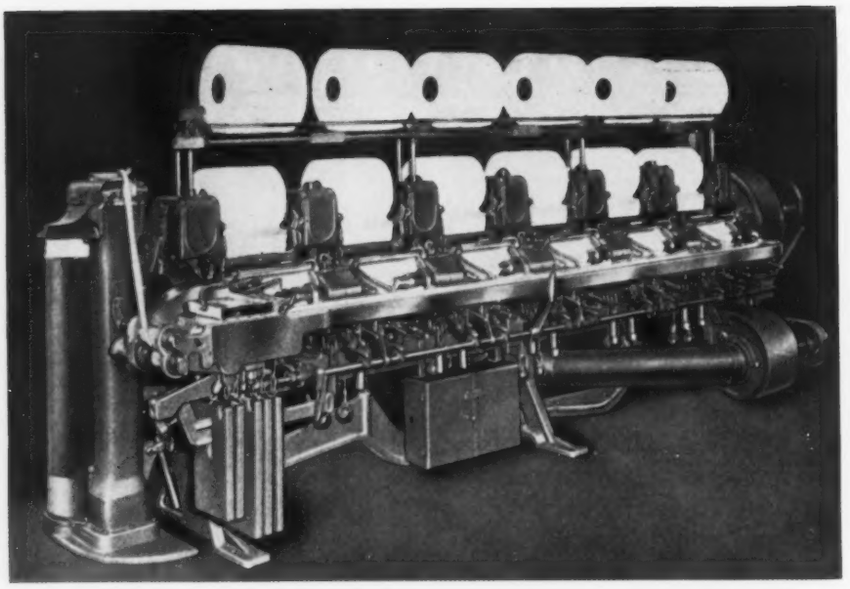
The static eliminating device consists of three transformers, a rectifying tube, and three Simco Neutrastats mounted in an iron box. On the left of the box is a two-pole attachment plug for 110 volts, 60 cycles, alternating current. A wire coming out of the side of the plug is attached to a ground. On the top of the unit is a single-pole, two-piece connector, the male portion of which is attached to a static bar. The female portion is the outgoing terminal of the Ionizer power unit. The static bar can be either a standard Simco open-type static bar with fiber disks to protect from mechanical damage, or a Simco metal-incased static bar. The bar is usually provided with 15 ft. of cable and is supported in such a position that the points of the bar are directed toward the material to be discharged, the distance from the points of the bar to the material being about 12 in. Where material to be discharged is moving very slowly, this distance may be increased to a few feet.

## Cotton Comber

Whitin Machine Works, Whitinsville, Mass., has announced a new cotton comber, the Model H, which is about 25% shorter than previous models. Decreased length is due to reduction of the number of heads from eight to six, and to simplification of the head-end gearing. Lint-catching projections have been eliminated, as far as possible, in order to make the machine easy to keep clean. A new lap selvage control with which the comber has been equipped is designed to decrease the danger of roughening the selvages of the laps; two round button-like guides hold the lap in proper position, and two selvage guides formed as extensions of two fixtures riding on the



wo new cotton looms of heavier construction: (left) X-2 Model, (right) XU Model for medium ducks (Draper)



Cotton comber (Whitin)

creel roll shaft present no crevices in which selvage fibers can catch.

In the head end, the usual notch wheels and cams have been eliminated by a condensed organization which runs quietly and continuously. Intermittent forward and backward movement of the detaching rolls is imparted by a planetary gear train; use of two planetary gear couples permits speeds of 110 nips per min. When changing staple or waste percentage, simultaneous adjustment of all nippers can be made by loosening two bolts.

A new mechanism makes it possible to release the weighting of draw box rolls and detaching rolls with one motion. When rolls are unweighted, a safety guard prevents the machine from being started. Provision is made for unweighting rolls individually, when desired.

The S-roll draw box, with leather covered top rolls and fluted steel bottom rolls, is made with separate guard for the gearing.

Whitin has also announced a new unit weighting system for Super-Draft and Inter-Draft roving frames, and the Bi-Coil drawing frame, designed to double drawing production. A description of these two developments will appear in an early issue of TEXTILE WORLD.

## Long Draft Aprons

Seamless non-stretching long-draft aprons for spinning and roving frames have been announced by Armstrong Cork Co., Lancaster, Pa. Manufactured from a non-oxidizing and highly oil-resistant synthetic rubber, and reinforced with a preshrunk fabric interlining, the Accotex aprons are said to be uniform as to both dimensions and homogeneity of material. They are available in any size required for standard long-draft systems of the double apron type, and do not become cracked or scuffed, it is stated, permitting cleaner operation with reduced waste. They are said to be unaffected by changing temperatures and humidities and to operate with a minimum of lapping under varied mill conditions.

## Adjustable-Speed Drive

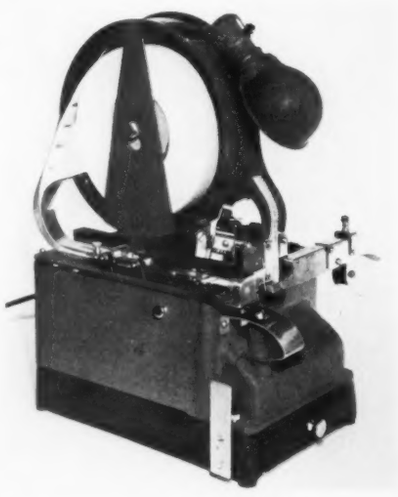
Development of a new 10-to-1 adjustable-speed a-c. drive, which uses a series circuit without the usual exciter, is announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. The new drive is designed especially for applications requiring smoothly adjustable speeds over wide ranges with constant torque, in locations where only a-c. supply is available. It is available in ratings from 1 to 15 hp., with a standard speed range of from 175 to 1,750 r.p.m., for 2- or 3-phase operation on 200-, 440-, or 550-volt, 60-cycle systems. In the textile industry the drive is expected to find use with such equipment as tenters, dry cans, starch mangles, padders, winders, etc.

The drive consists of a single-unit motor generator set, consisting of a squirrel-cage induction motor driving a series d-c. generator which supplies operating voltage for a d-c. series motor coupled to the driven load. In parallel with the generator series field is a rheostat which controls the driving motor speed. Control apparatus consists of an across-the-line starter for the squirrel-cage motor, and a push-button station. High-torque characteristics of the d-c. series motor are combined with the flat-speed properties of the shunt motor to give good speed-torque characteristics. Optional features include dynamic braking and inching. Open frames are standard; splashproof and totally inclosed frames are available.

## Label Printing Machines

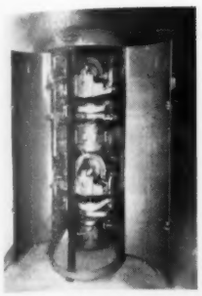
Two machines for printing tickets, labels, and pin tags have been announced recently by Dennison Mfg. Co., Framingham, Mass. One, the Dennison Dial-Set machine, is used for imprinting names of fibers, percentages of fibers, and name of customer on labels and tags. The machine is electrically operated and automatically fed. Type is set by means of dials, permitting wide flexibility. The machine is equipped with an automatic counter so that tags and labels are imprinted in predetermined quantities.

The other, the Dennison Pinning Machine, is used to print the names of fibers, percentages of fibers, and the name of manufacturer or customer on pin tickets. The machine makes possible printing and attachment of pin tickets to merchandise in one operation. The machine is electrically operated and can be easily moved from one department to another. Type may be used for setting the fiber names and percentages, or special logotypes can be provided for fiber names and company names. The machine will print 2-, 3-, 4-, or 6-line tickets, as well as the name above the pin. If both manufacturer's and retailer's names are to appear, one name may be preprinted at the bottom of an 8-line ticket and the remaining space,

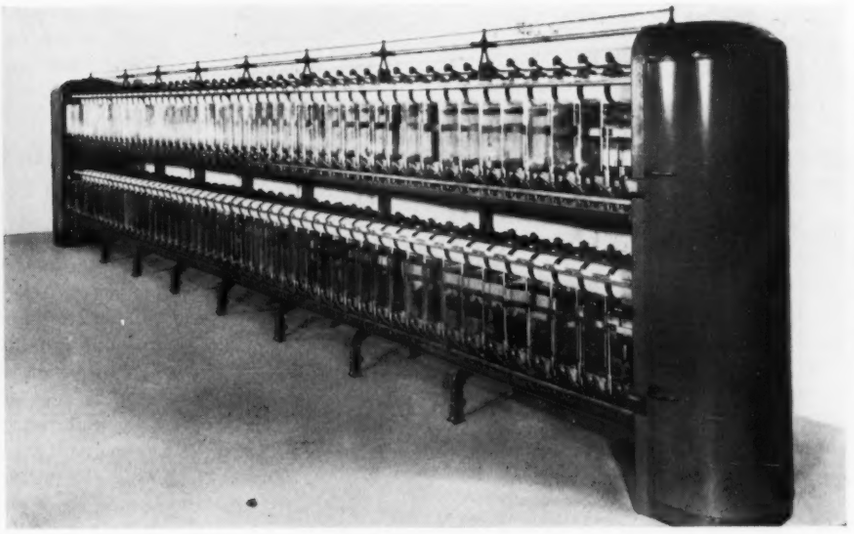


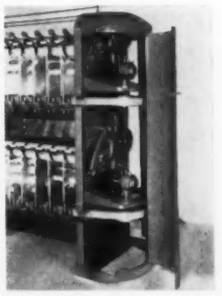
Printing machine for pin tickets (Dennison)

# LOOK INTO THIS



*The drive end open for inspection.*

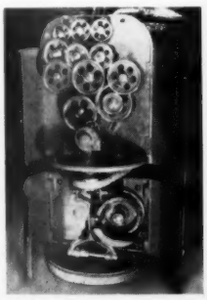




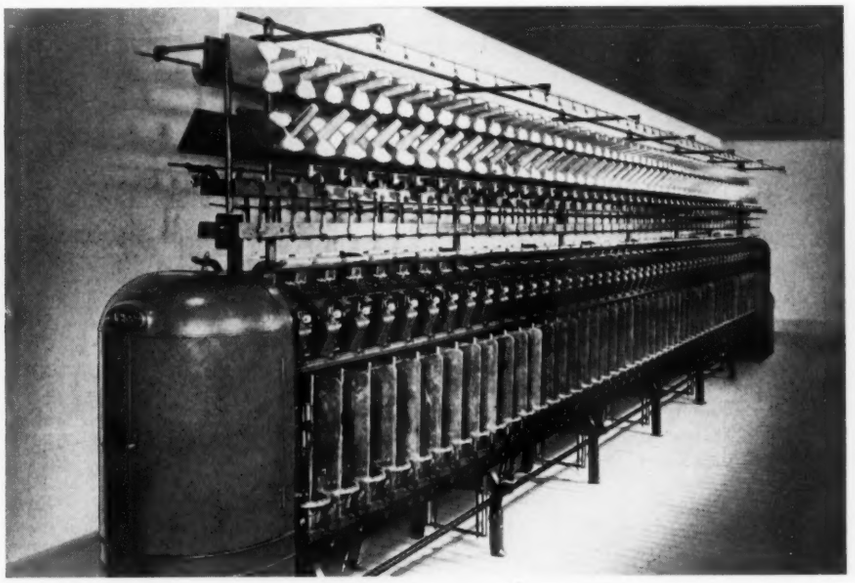
*The neat, compact, dependable gear unit.*

## ATWOOD Twister, Model 110

**From end to end a better designed, better built Twister for smooth, efficient, low cost production of rayon or combination yarns; capable of turning out extra large or extra heavy packages of precise uniformity day in and day out.**



*The twist unit end. Any twist from 1½ to 100 turns per inch is readily obtained, accurately maintained.*



*The drive end, neatly enclosed but easy to get at.*

## ATWOOD "5B", Model 10

**An equally new and dependable doubler-twister with traverse up to 8½", rings up to 4¾", for the precision production of bigger and better yarn packages.**

For the whole story on the Atwood Twister, Model 110 and the Atwood "5B", Model 10, get in touch with our nearest office.

**THE ATWOOD MACHINE CO.,** STONINGTON, CONN., U. S. A.

Sales Offices: WILKES-BARRE · STONINGTON · CHARLOTTE · LOS ANGELES

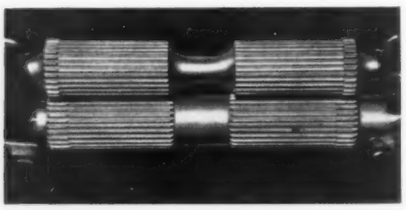
AGENTS THROUGHOUT THE WORLD

equivalent to the space of a 6-line ticket, is available for printing on the pinning machine. It is especially adapted for use on such items as shirts, pajamas, hosiery, underwear, gloves, etc.

## Twister Creel, Draw Frame Rolls, and Size Pump

To meet the demands of those mills which find it necessary to use Barber-Colman cheeses in twister creels, Saco-Lowell Shops, 60 Batterymarch St., Boston, has announced a new creel in which the pins are at right angles to the length of the frame; for 2-ply yarns, each pin carries 2 cheeses which supply the same spindle; cheeses are placed on standard Barber-Colman arbors which are fitted to the pins.

Another announcement is that of interlocking metallic rolls for drawing frames. Fluting is designed to provide just sufficient fiber penetration in the interflute spaces to assure a positive grip on the sliver throughout



Interlocking metallic drawing-frame rolls (Saco-Lowell)

the traverse. In addition, around the ends of each roll are narrow bands of higher flutes which interlock in the manner of gear teeth and provide a positive drive of the top roll. The effective grip of the rolls on the sliver and the uniform delivery produce a draft in the primary zone which is extremely uniform, it is stated. Advantages claimed for the interlocking rolls are: more constant effective roll diameter, more uniform draft, in the primary zone, and elimination of crimping, skidding, and curling of fibers.

In the new Saco-Lowell size pump, the method of constructing and installing stuffing glands is said to make them quickly and permanently adjustable and practically trouble-proof. A stainless-steel shaft which has been incorporated in the new size pump has for its purpose, the manufacturers state, prevention of wear and corrosion. The pump can replace older types without necessitating serious changes in pipe lines and foundations, it is said, and can be furnished with a built-in geared motor reduction drive.

Improved abrasion tester (Taber)

## Abrasion Tester

Several important improvements over previous models have been incorporated in the Research Model Taber Abraser, announced recently by Taber Instrument Co., North Tonawanda, N. Y. The device is designed to measure resistance to abrasion of various types of woven and knitted textiles ranging from sheer fabrics to upholstery cloths. The primary elements of the Abraser are a motor-driven turntable on which the specimen is mounted, a counter to indicate the number of abrasion cycles, and two abrading wheels that alternately rub back and forth, and at the same time, criss-cross in their rolling path. These wheels are made in five types of closely controlled resilient material charged with special grades of fine abrasive grain.

The Research Model is provided with standardized load adjustment for varying the pressure of the wheels against the specimen to suit the type of material being tested. For instance, the pivoted arms without auxiliary weights apply a pressure against the specimen of 500 grams per wheel, which is recommended for general use on textile fabrics. Delicate fabrics, however, require the use of a counterweight with which a pressure of 125 grams per wheel is obtained.

Alfred Suter, 200 Fifth Ave., New York, is eastern representative for Taber Instrument Co.

## Electric Filling-Fork Stop Motion

Designed to increase loom production and to improve quality of cloth by eliminating thin places, an electric filling fork stop motion developed by G. H. McRae, Thomaston, Ga., is made up of only 3 pieces, and replaces mechanisms whose number of parts may be as high as 32. Maintenance requirements of the stop motion are very low, it is stated, because there is no trigger arrangement to get out of adjustment. In addition to simplifying the loom-fixer's job, the device is said to lower operation costs.

## Fiber-Length Measuring Instrument

The fibrograph, developed by Dr. K. L. Hertel of the University of Tennessee, Knoxville, Tenn., is an instrument for determining length values of samples of fibers. It is an optical instrument which employs photovoltaic cells as a means of scanning samples of parallel fibers and tracing length-frequency curves. Samples are prepared by using two combs; the combs are manipulated symmetrically to straighten and parallel the fibers and to secure an even distribution of fibers.

The combs, holding the prepared samples, are placed in the fibrograph, and the sample is scanned by the instrument. A pen automatically records, in the form of a curve, the length values and the length frequencies of the fibers. The fibrograph plugs into ordinary light circuits and requires only the one connection. Only six instruments have been made to date with four more planned. When these ten have been finished, it is hoped that a few final kinks will have been ironed out and that production can be begun on a commercial scale.

## Useful Accessories for Textile Mills

**A combined trip and throttle valve** has been developed by General Electric Co., Schenectady, N. Y. The new valve is said to eliminate the shut-off previously required and to provide over-speed protection similar to that on large central-station units.

Also announced by General Electric Co., is a new Tri-Clad capacitor motor which is available in either ball-bearing or sleeve-bearing construction and in two types—Type KC for moderate, and Type KW for high starting torques.

**Square bus cable taps,** designed to insure high contact pressure and low contact resistance, are a development of Burndy Engineering Co., Inc., 459 E. 133rd St., New York. The clamping elements are situated to provide a minimum of bulk and projection; the connectors are available for all sizes of square tubes and for various conductor combinations.

**A variable-speed pulley** designed for

# *For Faithful Service*

ON February first of this year, in a fitting ceremony, Sonoco Products Company presented Continuous Service Emblems to nearly six hundred of their more than one thousand employees—for Faithful Service.

This was recorded evidence of the spirit and intent that prevails within the Sonoco organization, which for more than 40 years has contributed its services faithfully to the textile industry.

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KNITTING ARTS EXHIBITION—PHILADELPHIA, APRIL 21 TO 24—BOOTHS 96, 97, 98 AND 99

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## SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

light, inexpensive machinery has been announced by Ideal Commutator Dresser Co., Sycamore, Ill. The pulley mounts directly on the motor shaft and requires only standard V-belts; features include short over-hang, forced lubrication, balanced sheave, and all-metal construction. Speed ratios up to 2¾ to 1, and sizes up to ¾ hp. are available.

**An inclosed circuit breaker** designed for protection of all types of light and power circuits is announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Designated Type AB-1, the breaker is made in four frame sizes with ratings from 15 to 600 amp. and from 250 volts a.c., 125—250 volts d.c. to 600 volts a.c., 250 volts d.c.

**Also announced by Westinghouse is** a fluorescent luminaire employing two 100-watt, 60-in. white, or daylight fluorescent lamps, and designed for general and supplementary high-level illumination in industrial or commercial areas. It is available for operation on 110-125, 199-216, and 220-250 volts, 60 cycles a.c. Two types are available; the direct type which throws all light downward, and the diffuser type which allows a minimum of 2½% upward light; both reflectors provide a 14-degree shielding angle below the horizontal.

**A portable belt lacer** designed to generate pressure of over 30,000 lb. is announced by the Clipper Belt Lacer Co., Grand Rapids, Mich. It is said to permit imbedding the belt hooks flush with the surface of the belt, and clinching the points. It is also stated that the lacer can be carried to the belt; it will lace one end of any belt up to 6 in. wide, and not exceeding ⅜ in. thick, in one operation, and wider belts in two or more operations.

**Two recording thermometers** of the liquid filled type, known as case-compensated, and fully-compensated Class I recording thermometers, have been developed by Bristol Co., Waterbury, Conn. Improved design and construction of the measuring elements, tubing, and bulbs in these instruments are said to extend the field of application of liquid-filled thermometers. The case-compensated instrument is offered in temperature ranges up to 400° F. and tubing lengths up to 10 ft. or longer; the fully-compensated thermometer can be had in ranges up to 400° F. equipped with 200 ft. or less of connecting tubing.

**A 36-in. Mazda fluorescent lamp** rated at 65 watts and available in 3500-degree white and daylight is announced by Lamp Dept. of General Electric Co., Nela Park, Cleveland. The lamp is designed for general lighting, has a 2⅛-in. diameter bulb, burns in any position, has a rated initial output of 2,100 lumens, and a rated life of 2,000 hr.

**Gulf Oil Corp.,** Pittsburgh, Pa., has announced development of two new lines of lubricating greases for ball and roller bearings. One is recommended for heavy-duty service; the other is recommended for lighter duty and higher speeds. Both have a high melting point and both are relatively smooth, non-fibrous in texture, and are available in a wide range of consistencies.

# New Dyes and Chemicals

## Scouring Agent

Development of a new scouring agent, called Modinal D, has been announced recently by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. Use of this product is said to eliminate the second rinsing process in fulling and scouring wool piece goods and to reduce scouring time by about 40 min. Recommended procedure with the new product is to scour with fulling soap as usual and rinse moderately, scour for 15 to 20 min. with ½% Modinal D, and rinse. The amount of paste may be reduced if the goods are clean and it should be increased if the goods are very dirty. Advantages attributed to Modinal D Paste are that it reduces the possibility of blotchy dyeing; insures a cleaner odor; provides a saving in steam by use of colder water in rinsing; reduces time of rinsing to neutrality; and provides a safety factor where conditions vary, such as hardness of water, volume of water available, and temperature of water.

## Water-Repellent Finish

Development of a new water-repellent finish has been announced by Alrose Chemical Co., Providence, R. I. This compound, known as Alropel, is designed to impart resistance to fog, rain, sleet, spots, and perspiration, without impairing the texture, color, feel, or porosity of the fabric. It is stated that Alropel emulsions being very stable, do not foam or break down readily; hence, there is no trouble with spots or stains. The compound is applied by one-bath method, and fabrics so treated can be calendered without impairing their water-repellency.

## Wool Lubricant

A fiber lubricant for use in carding and spinning of woolen and worsted yarns has been announced recently by Quaker Chemical Products Corp., Conshohocken, Pa. The compound, known as Quaker 703-CA, is self-emulsifying, and can be used either undiluted or diluted in water, as preferred. It is stated that laboratory tests show the scourability of this product to be very complete, whether scouring is done promptly in the course of the regular manufacturing routine, or is deferred as when yarn or woven fabric is stored for periods of time before scouring or dyeing.

## Resin Finish

A new emulsion blend of resins, known as Aerotex No. 301, has been recently announced by the Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J. The most important application of this new finish is for producing a soft and supple hand on spun rayon and spun rayon mixed fabrics. An advantage cited for Aerotex No. 301 is that it requires no boiling. The permanency of this finish is said to be unusually good, tests showing that after ten commercial launderings, goods finished with Aerotex No. 301 have a 65% retention of the finish. As stability of this product is good, it is possible to keep it stored for two months or longer. Other tests indicate that absorption of chlorine is insufficient to cause tendering during laundering.

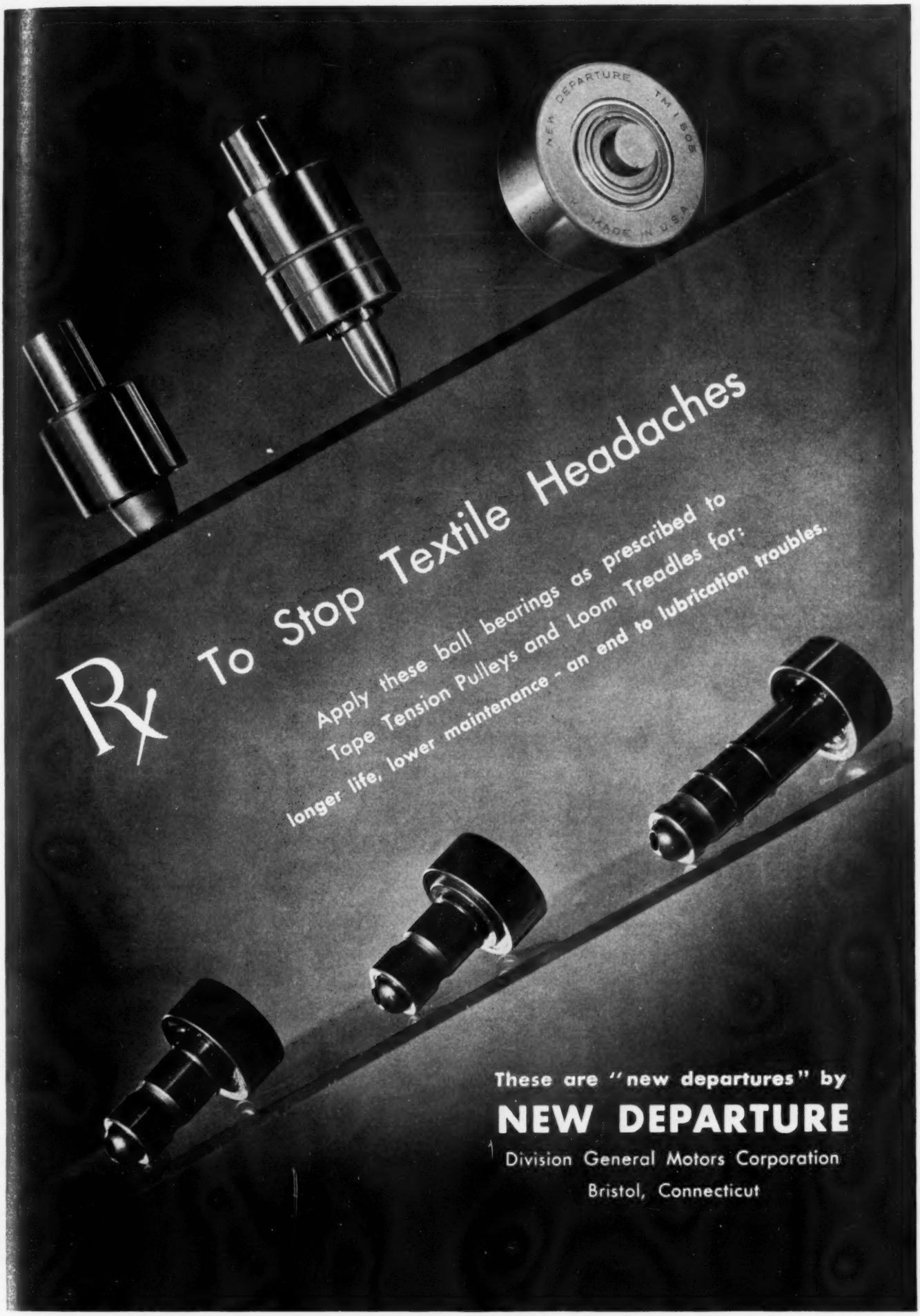
## General Dyes

General Dyestuff Corp. announces the following new products: Fastusol Turquoise Blue LGLA, a direct dye suitable for producing, on cotton or rayon, greenish shades of blue which combine brilliance and clarity of tone with good to excellent fastness to light; it yields shades of purity previously not obtainable even with basic dyes.

Celliton Fast Yellow GA, a direct-dyeing acetate dye which produces bright, fairly greenish shades of yellow of very good fastness to light.

Dianil Yellow 5GA, a direct dye for producing brilliant shades of yellow and of bright green where fastness to light is not a requisite.

Celliton Fast Yellow RRA, direct-dyeing acetate dye producing bright, fairly reddish shades of yellow possessing very good fastness to light.


NEW DEPARTURE TM 1505 MADE IN U.S.A.
℞ To Stop Textile Headaches
Apply these ball bearings as prescribed to
Tape Tension Pulleys and Loom Treadles for:
longer life, lower maintenance - an end to lubrication troubles.
These are "new departures" by
NEW DEPARTURE
Division General Motors Corporation
Bristol, Connecticut

# New Publications

## Industrial Fabrics

HANDBOOK OF INDUSTRIAL FABRICS, Third Edition, George B. Haven, Wellington-Sears Co., Inc., 65 Worth St., New York, $2.

In the new and enlarged edition of this well-known handbook the sections relating to cotton marketing have been entirely rewritten; new illustrations including stroboscopic photographs of the spinning operation have been included in the chapter on manufacturing; a description of Vinyon filter fabrics has been added to the chapter on uses; illustrations and descriptions of laboratory equipment have been brought up-to-date; the chapter on specifications and test methods has been revised to include A.S.T.M. specifications approved in 1940; and a comprehensive bibliography has been added of Government publications relating to textiles and of papers presented before the A.S.T.M. The wide acceptance which the two previous editions have had among textile engineers, purchasing agents, designers, students, and others has amply demonstrated the value of a reference volume of this type. The additional material included in the new edition makes it even more valuable than its predecessors.

## Charleston, At Its Beginnings

HILTON HEAD, by Josephine Pinckney; Farrar & Rinehart, Inc., New York; $2.75.

With such a fascinating background as the life of Henry Woodward to draw upon, the wonder is that this story has not been told before. But we are definitely glad that Josephine Pinckney did the telling, for she has done a beautiful piece of work.

As one reads Hilton Head, the old Charleston we know today seems brash and new compared with the stockaded village she writes about. And it seems unbelievable that the peaceful hunting site of Hilton Head, known to sportsmen throughout the textile industry, was the scene of more than one massacre in the 16th and 17th centuries.

Henry Woodward, who was an old man and dying at the age of 40, was the first tenant of the Lords Proprietors of the Carolinas, obtaining this distinction by living alone with the Indians at Hilton Head while waiting for colonization plans to be fulfilled. Backed by the medical knowledge he had gained as a lad in London, and replenished by study during a period of captivity among the Spaniards of Augustine, his position in the new world was easily established. And, when at last he returned to Carolina, with the colony for which he had held domain, he became the foremost English explorer of the Carolina rivers, and established the great trade between the Creeks and Charlestowne.

This novel is historically authentic, and is one of particular appeal to Carolinians, but even to those who have no more than a business or a tourist acquaintanceship with the section it is highly recommended.

## Who Makes It?

Trade-Names Index; Special Libraries Association, 31 East Tenth St., New York; $4.

This book should be of value to purchasing agents and others who wish to determine sources of supply for or definitions of various products identified only by their trade names. The list of trade names included has been compiled from the card files of the Technology Department of the Carnegie Library, Pittsburgh, Pa. It includes only a small percentage of the total number of trade names in existence, but a supplement gives more than 100 sources of readily accessible lists of trade names, arranged under such headings as chemicals, dyes, textiles, etc.

## International Labor Statistics

1940 YEARBOOK OF LABOR STATISTICS; Interntional Labor Office, Washington Branch, 734 Jackson Place, Washington, D. C.; $3.00 cloth, $2.00 paper.

This is the current edition of this international work of reference comprising in tabular form the most complete data obtainable in some 50 countries relating to population, employment and unemployment, hours, wages, cost of living, family budgets, migration, industrial accidents, etc. All the tables have been brought up to date so far as possible. The I. L. O. has tried to bring out as clearly as possible the nature and significance of the figures available in different countries.

## Help from FBI

SUGGESTIONS FOR PROTECTION OF INDUSTRIAL FACILITIES; Federal Bureau of Investigation, U. S. Department of Justice, Washington, D. C.

In connection with the program of the FBI to survey the protective facilities of manufacturing establishments having large contracts to provide the Government with defense materials and to assist industrial concerns and municipalities in establishing effective protection against possibilities of acts of espionage and sabotage, the FBI has prepared the above comprehensive booklet. Because of its comprehensive nature, this booklet is limited in distribution to heads of duly constituted law enforcement agencies and executive officials of industrial concerns manufacturing defense materials under Government contracts. A copy will be furnished an industrial concern upon the written request of an executive official to J. Edgar Hoover, Director of the FBI.

## To Avert Sabotage

SABOTAGE—HOW TO GUARD AGAINST IT, by Harry Desmond Farren; National Foremen's Institute, Inc., Deep River, Conn.; $1.00.

The purpose of this book, as given in the Foreword, is to inform industrial workers "of the serious dangers that confront them; to make them aware and alert; to show the need for shoulder-to-shoulder unity, and to prevent loss of life, bloodshed, and disaster, such as was suffered in 1917-18, through unintentional laxity, ignorance of conditions, and a constant seepage of saboteurs into the vital industries of the nation." It contains detailed check lists of all the various places and services which should be investigated as protection against sabotage.

## A Group of English Textile Directories

SKINNER'S COTTON TRADE DIRECTORY OF THE WORLD, 1940-41 Edition; Thomas Skinner & Co. Ltd., London, and New York; price; $7.00.

This is the eighteenth issue of this work of reference of the Cotton and Allied industries. The customary thoroughness in revision of details has been carried out in so far as has been possible owing to the prevailing conditions of war.

The Hosiery and Knit Goods Manufacturers section has also been completely revised and materially extended in an endeavor to meet the requirements of this specialized branch of industry.

BRITISH & DOMINION TEXTILE INDUSTRY; John Worrall, Ltd., Oldham, England; price to U. S. 14½ shillings.

This 1940 edition of Worrall's directory is the 50th edition of the publication. It covers all textile manufacturers outside the Lancashire and Yorkshire

**"See You at the Show"**

Whether your visit is purely social, or whether you want to learn what's new in full-fashioned knitting, you will find a sincere, hearty welcome at Full-Fashioned Machine Headquarters.

*Booths 300-304; 325-329 . . . Knitting Arts Exhibition*

TEXTILE MACHINE WORKS, READING, PA.

districts which are reported in separate volumes.

YORKSHIRE TEXTILE INDUSTRY: John Worrall, Ltd., Oldham, England; Price 21 shillings

This 1940-41 edition of the Yorkshire directory is the 56th edition. It contains the usual list of firms by towns and districts and classified by products.

RAYON & SILK DIRECTORY and BUYERS' GUIDE; Harlequin Press Co. Ltd., Old Colony House, Manchester 2, England; Price 21 shillings

This 15th issue of the Rayon & Silk Directory gives considerable statistical matter in addition to the listing of manufacturers. It includes rayon and silk tariffs of the world, world producers of synthetics, prices, production, etc.

# News of Suppliers

JAMES M. WHITE, who has been appointed by Allis-Chalmers Mfg. Co., Milwaukee, Wis., as assistant general works manager. In the absence of William Watson, vice-president and general works manager, Mr. White will assume full authority over all manufacturing facilities of the company. Mr. Watson will devote more time to general manufacturing policies. Mr. White has been manager of the company's La Porte Works for the last six years.

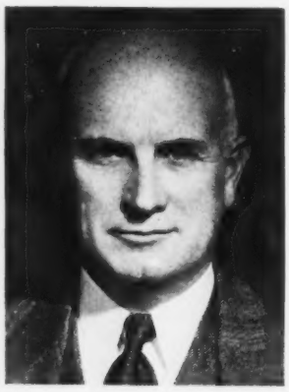
**Mathieson Alkali Works,** New York, has appointed Eric R. Woodward, formerly with the Barrett Co., to its Sales Development Department where he is engaged in promotional work on new products.

**Quaker Chemical Products Corp.,** Conshohocken, Pa., has appointed Edwin R. Baker to be in charge of the laboratory sales and service department serving the textile industry. Mr. Baker has been in charge of the laboratory and manufacturing of a textile specialty house for many years. G. H. Rhodes, who has been in charge of this department, is now heading the textile research and development department. J. W. Murphy, Bala-Cynwyd, Pa., has joined Quaker Chemical. He is a graduate of the Philadelphia Textile School in Chemistry, and has had several years of experience in the dyeing and finishing of hosiery and finishing of cotton goods. He has been added to the technical sales force in the South Carolina-Georgia territory.

**Fairforest Finishing Co.,** Spartanburg, S. C., has removed its New York office to 221 Church St.

**Northern Equipment Co.,** Erie, Pa., has appointed Henry G. Carter of Tampa, Fla., as district representative for Copes feedwater regulators, etc.

**Carolina Aniline & Extract Co.,** Charlotte, N. C., has been taken over



GEORGE B. BEITZEL, manager of sales of the Pennsylvania Salt Mfg. Co., Philadelphia, who has been elected president of the Sales Managers' Association of Philadelphia. He will assume his new duties at the fall meeting of the association.

by the following: N. G. Sixt, G. S. McCarty, T. J. Marler, E. B. Wheeler and F. A. Tomalino. Larger quarters have been secured.

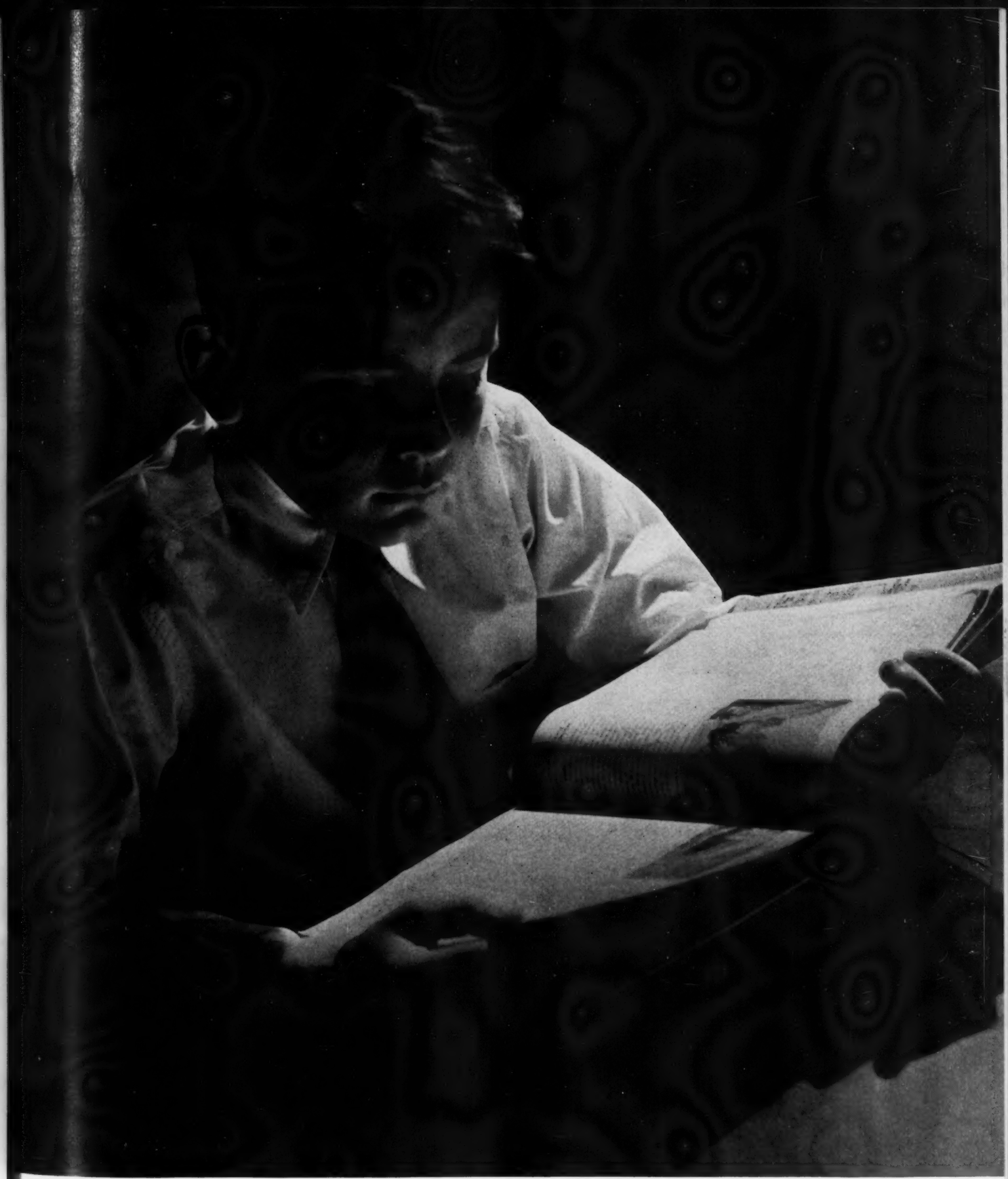
**Auto Knitters & Hosiery Ltd.,** Toronto, Ont., makers of hand-operated knitting machines have decided to move their plant to 637 Davenport Rd.

**National Oil Products Co.,** Harrison, N. J., has purchased the six-story brick building adjoining its plant at Harrison. This marks the third expansion at the plant in the last year. Contracts to remodel and modernize the entire structure, formerly occupied by the Manufacturers' Can Co., were let immediately upon taking title. The building will be used for additional warehouse facilities.

**D. W. Haering & Co., Inc.,** Chicago, Ill., has opened a new sales office in Pittsburgh, Pa. Walter Peffer, sales representative, is in charge at 207 Investment Building. The company's representation in the Southwest has been increased with the addition of G. I. Thomas, P. O. Box 2576, Dallas, Tex. Haering has also opened a new office in Philadelphia, Pa., with W. E. Schaffnit in charge at 1109 Otis Building.

**Westinghouse Electric & Mfg. Co.,** East Pittsburgh, Pa., recorded in 1940 "the greatest expansion in business in its 55 years of existence," according to its annual report. Orders received during 1940 amounted to $400,477,724, an increase of 87% over 1939. Approximately 40% of this 1940 business

SNAPPED AT RECENT MEETING of Textile Operating Executives of Georgia at Atlanta—(left to right) J. W. Stribling, Universal Winding Co.; Floyd Hughes, Howard Bros. Co.; Geo. W. Murphy, H & B American Machine Co.; E. R. Lehmann, superintendent, Langdale (Ala.) plant of West Point Mfg. Co.; Walter Mitchell, Draper Corp.



**"We make our future by the best use of the present"**
EDGEWORTH

The new READING 30-Section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines . . . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

MARVIN S. EAVENSON, who has just been put in charge of the Laundry Division and Division H of the Industrial Sales Department of National Oil Products Co., Harrison, N. J.

was orders in connection with the national defense program. Net sales billed amounted to $239,431,447, an increase of 37% over last year. The previous peak was $216,364,588 in 1929. Net income for the year was $18,985,428 compared with $13,854,365 in 1939, an increase of 37%. Total payroll for 1940 amounted to $109,743,043 compared with $80,916,341 in 1939.

**Iron & Steel Products, Inc.,** Chicago, have opened a branch office in Washington, D. C., American Security Building, in charge of Ernest W. Smoot, vice-president.

**P. B. Hart,** textile raw materials, testing and service, Montreal, Canada, moved on March 10 to new and more modern offices in the Dominion Square Building, 1010 St. Catherine Street West, at Peel Street, Montreal.

**International Business Machines Corp.,** New York, has promoted Gordon Packard to the newly created position of general sales manager. He will be in charge of the sales activities of all divisions of the company with headquarters in New York.

**Automobile Manufacturers Association,** Washington, D. C., has just released a new sound motion picture "Singing Wheels," for showings before non-theatrical audiences. It contains no advertising but vividly presents the vital importance of motor trucks in complex modern life. It was timed to harmonize with the institutional advertising campaign of the American Trucking Association.

**Allis-Chalmers Mfg. Co.,** Milwaukee, Wis., has appointed Carlton B. Smith, formerly district service engineer in the Southeast District, to district superintendent of service and erection with headquarters in the Healy Bldg., Atlanta, Ga.

**Trumbull Electric Mfg. Co.,** Plainville, Conn., on March 10 transferred its equipment from the Ludlow, Ky., plant to a much larger factory in Norwood, Ohio, which is a part of metropolitan Cincinnati. This new factory contains triple the floor space of the old plant. The company also has purchased an additional factory in Plainville, Conn., known as the West Plant.

**Thermoid Rubber Division of Thermoid Co.,** Trenton, N. J., has appointed R. E. Spencer Geare to assist in the company's program of improvement and expansion of its industrial rubber products line. He will concentrate on the improvement of Thermoid's multiple-V-belt and F. H. P. belt programs and expansion of V-belt sales.

**Cincinnati** (Ohio) **Rubber Mfg. Co.** has entered the field of multiple V-Belts and can supply all standard sizes usually required for multiple V drives.

GUY T. AVERY, who has been promoted by Acme Steel Co., Chicago, to position of works manager of the Riverdale Plant where the majority of Acme products are now manufactured. He has been with Acme since 1920.

**Cochrane Corp.,** Philadelphia, has appointed W. W. Tomes to head the Flow Meter Section. Assisting Mr. Tomes will be W. C. Morrison, lately associated with the Brooklyn Union Gas Co. as a sales engineer.

**Roller-Smith Co.,** Bethlehem, Pa., has appointed Paul Helms as purchasing agent, effective April 1 upon the resignation of Harry A. Cassler, who held that position for the last 20 years.

**Wickwire Spencer Steel Co.** and its subsidiary, the American Wire Fabrics Corp., New York, has appointed Dean Rollans as general sales manager, succeeding A. G. Bussman who has resigned because of ill health.

**Duke Power Co.** plans an outlay of $3,000,000 in enlarging its Buck Station, Rowan County, N. C., by building two additions to its steam plant. This is part of a $20,000,000 program. The expansion at the Buck Station will bring in an additional 40,000 kilowatts, which, added to capacity present and already under construction, will bring its total to 190,000, the largest of the Duke plants. The Cliffside Plant in Rutherfordton and Cleveland Counties, N. C., with a capacity of 80,000 kilowatts, has recently been completed. Duke Power Co. furnishes power for most of the Carolina cotton-textile plants, which are now running at full capacity.

**Koppers Co.,** Pittsburgh, Pa., has elected W. F. Munnikhuysen as vice-president of the company, and appointed him general manager of the Wood Preserving Division. He formerly was president of the Wood Preserving Corp., a Koppers subsidiary, which recently became a division of Koppers Co.

**DeVilbiss Co.** has opened a new sales and service branch, ultra modern in its facilities, appointments and appearance, in Chicago at 1280 West Washington Boulevard.

**George Scherr Co., Inc.,** New York, has been appointed as exclusive sales representative, both domestic and foreign, for the Wilder Micro-Projector manufactured by R. S. Wilder, Inc., Waltham, Mass. This projector is a highly accurate machine for measuring or comparing objects by means of a magnified shadow image.

**National Folding Box Co.,** New Haven, Conn., is celebrating its 50th anniversary. It was formed in 1891 by the merger of eight companies, whose dates of founding ran from 1860 to 1882. National has issued an attractive booklet to commemorate this milestone.

**Commercial Investment Trust Corp.,** reports combined net earnings of $15,805,222 for 1940 against $15,715,169 for 1939.

ROSCOE H. SMITH, who has been made manager of applied engineering, Reliance Electric & Engineering Co., Cleveland, Ohio. He joined Reliance in 1923.

*You*
*are cordially invited*

TO VISIT THE
DIXIE MERCERIZING COMPANY
BOOTHS 245, 246, 247, 248
—OUR SAME OLD STAND
DIXIE'S REPRESENTATIVES
EXTEND TO YOU
A SINCERE WELCOME

IXIE MERCERIZING COMPANY • CHATTANOOGA, TENN.

# FREE FOR THE ASKING

**Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.**

**Temperature controllers** are the topic of a 48-page bulletin, No. 177-1, which is being distributed by Foxboro Co.

**"Metallic Soaps"** is the title of a booklet which contains chapters dealing with metallic soaps in common use, those less commonly known, uses in industry, and analyses of metallic soaps; published by National Oil Products Co.

**Hot process water softeners** for removal of hardness, silica, and other scale-forming material from boiler feed and industrial process waters are described in a 48-page catalog No. 3000, published by Cochrane Corp.

**Government textiles** and how modern and up-to-date equipment can aid mills in producing them efficiently are subjects discussed in the February issue of *Davis & Furber News*, distributed by Davis & Furber Machine Co.

**An adjustable speed drive,** operating all-electrically from a.c. current supply, in sizes from 1 to 15 hp., is announced in Bulletin GEA-3517, offered by General Electric Co.

**Cotton equipment** described in the January issue of *Saco-Lowell Bulletin* includes this company's high-speed slasher, an article on its new thread-board assembly, comparison of two dust and waste extractors, and other data on cotton yarn machinery; published by Saco-Lowell Shops.

**Controlled automatic lubrication** is the subject of Bulletin J which gives fourteen ways in which metered lubrication pays machine users in savings; prepared by Bijur Lubricating Corp.

**Bearing bronze** in a variety of types for bushings, bearings, bars, etc., is described in catalog No. 410, which lists sizes stocked by Johnson Bronze Co.

**Speed reduction** by means of a new type unit which mounts on the shaft extension of a driven machine, and is available in sizes from ½ to 30 hp., is the topic of Catalog R-41, issued by American Pulley Co.

**De-ion linestarters** for squirrel-cage and wound-rotor induction motors up to 7½ hp. are described in Data Sheet 11-204 issued by Westinghouse Electric & Mfg. Co.

**"Cloth-ageing Machines"** is the title of an article describing use of roller-drive chain and variable speed transmission equipment in machines of this type; article appears in March issue of *Link-Belt News*, offered by Link-Belt Co.

**Interlock knitting** machines are pictured and described, and a sample of cloth knitted on a 28-cut machine included, in a recent mailing piece of Wildman Mfg. Co.

**Two new looms,** one for production of light and medium weight fabrics, the other for weaving ducks, are described in the March issue of *Cotton Chats*, published by Draper Corp.

**D.C. motor control** is the subject of Bulletin GEA-3531 which contains eight pages, including a two-page "How to Select" chart; offered by General Electric Co.

**Identification** of articles which contain wool, is discussed in a recently issued bulletin titled Identification Facts No. 3, which contains the full text of the Wool Labeling Act, as well as data on up-to-the-minute interpretations of the act; offered by Kaumagraph Co.

**Use of roller bearings** in industrial equipment is the subject of Vol. 1, No. 1 of a pictorial pamphlet titled *Hyatt Innerscope*, and published by Hyatt Bearings Div., General Motors Sales Corp.

**Color-matching lamps** in four types are described in Bulletin 101, which includes price data on these lamps, which are produced by Macbeth Daylighting Corp.

**A new selvage harness,** how it works, and how it saves time in getting looms started, is the topic of a 4-page folder issued by Steel Heddle Mfg. Co.

**Ability and aptitude testing** in business is described and the advantages it makes possible listed, in a 16-page booklet produced by Personnel Institute, Inc.

**Automatic size-box control** for heat and supply of size solutions is among topics discussed in the March issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works.

**Air conditioning** and cleaning systems in a wide variety of types are pictured and described in Bulletin 341, recently issued by Parks-Cramer Co.

**Circuit breakers** of the air-blast type are described and pictured, and the increased safety of their split-cycle speed highlighted, in a mailing piece offered by Allis-Chalmers Mfg. Co.

**"Slip Covers for Furniture"** is the title of a booklet which contains sections on use of slip covers, choosing fabrics for service, decorative features, estimated yardage, construction of slip covers, and other subjects; issued by Bureau of Home Economics, Department of Agriculture.

**Air cleaning** in spinning, winding, twisting, and warping departments; and monorail materials-handling equipment are topics discussed in the March issue of *The Swirling Column*, issued by American MonoRail Co.

**A variable-speed transmission** manual, designated No. 501, which gives complete data, together with illustrations and notes on typical installations, and a summary of the applications of various types of variable speed transmission is being distributed by Graham Transmissions, Inc.

**A softening and finishing agent** known as Soromine FW Paste, for use on rayon, rayon mixtures, and cotton, is the subject of a Circular G-212, offered by General Dyestuff Corp.

**Induction motors** in totally-inclosed, fan-cooled, squirrel-cage types are described and illustrated in Leaflet BC-A120, distributed by Century Electric Co.

**Boiler blowoff equipment** for automatic continuous operation is the subject of Bulletin 2391, which contains in addition to considerable text, diagrammatic and photographic illustrations; offered by Permutit Co.

**Materials handling** by means of a raise-lower cab carrier system for intra-plant transportation of a variety of types of materials is the subject of folder 2006-A, issued by Cleveland Tramrail Div., Cleveland Crane & Engineering Co.

**Remote controllers,** temperature-control instruments, portable potentiometers, and a number of accessories are pictured and described in a recent 12-page mailing piece distributed by Wheelco Instruments Co.

**Bronze valves** with stainless-steel seats and disks said greatly to increase wearing qualities are the subject of Bulletin 4-4500-D, which is being distributed by Hancock Valve Div., Manning, Maxwell & Moore, Inc.

**Chemicals** produced by its Phosphate Division, with information on their properties, grades, containers, and principal uses, are covered in a 48-page pocket-size booklet prepared by Monsanto Chemical Co.

**Valves, meters, recorders,** and a variety of other products for industry are cross-indexed in Publication 2997, which lists over 100 different items manufactured by Cochrane Corp.

**Industrial thermometers,** in dial and recording types, are described in the 1941 edition thermometer catalog prepared by the Instrument Div., Manning, Maxwell & Moore, Inc.

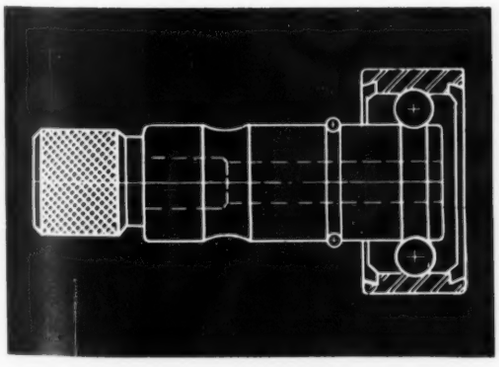
**Direct-fired systems** for burning pulverized coal are the subject of a 36-page catalog containing 50 illustrations, which is being distributed by Combustion Engineering Co., Inc.

**Oil circuit breakers** in several different types and capacities are covered in Catalogs 3650 and 3940, recently published by Roller-Smith Co.

**A photoelectric relay** in a new inexpensive model for counting, diverting, controlling, signalling, limiting, and protecting, is described in Leaflet GEA-3533, offered by General Electric Co.

**A wood preservative** consisting of a highly refined creosote is described in Bulletin TD-11 which contains directions for preserving wood by dipping, brushing, and spraying; also for using the material as an insecticide and weed killer; offered by Koppers Co., Tar and Chemical Div.

# *"Free-Wheeling" Whitin Tape Tension Pulleys Spin Easily On Shielded, Lubricated Fafnirs*



**FAFNIR DEEP-GROOVE FULLY SEALED PULLEY BEARING FOR LONG LIFE**

The Deep-Groove Fafnir Ball Bearing incorporated in this new Tape Tension Pulley has been proved in performance for unusually long life. Literally hundreds of thousands of high-capacity Fafnirs are in use today throughout the textile industry, each paying dividends in extra performance over ordinary ball bearings.

The disadvantages of old-style wooden-bearing tape tension pulleys are eliminated in this new Fafnir Ball Bearing equipped Whitin pulley.

With it, tape tension can be reduced, yet more uniform spindle speeds result. Tape life is lengthened, with slip-stops a thing of the past. Double shields eliminate lint from the bearing and retain the lubricant. The very low friction of the Fafnirs cuts power waste to the bone.

Lubricated by a grease cup, holding just the right amount of grease for a full year's continuous operation, this ball bearing pulley can be furnished on specification. Or, it is available to replace your old pulleys, with no alteration except installation of new hangers. Full details on request. The Fafnir Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.

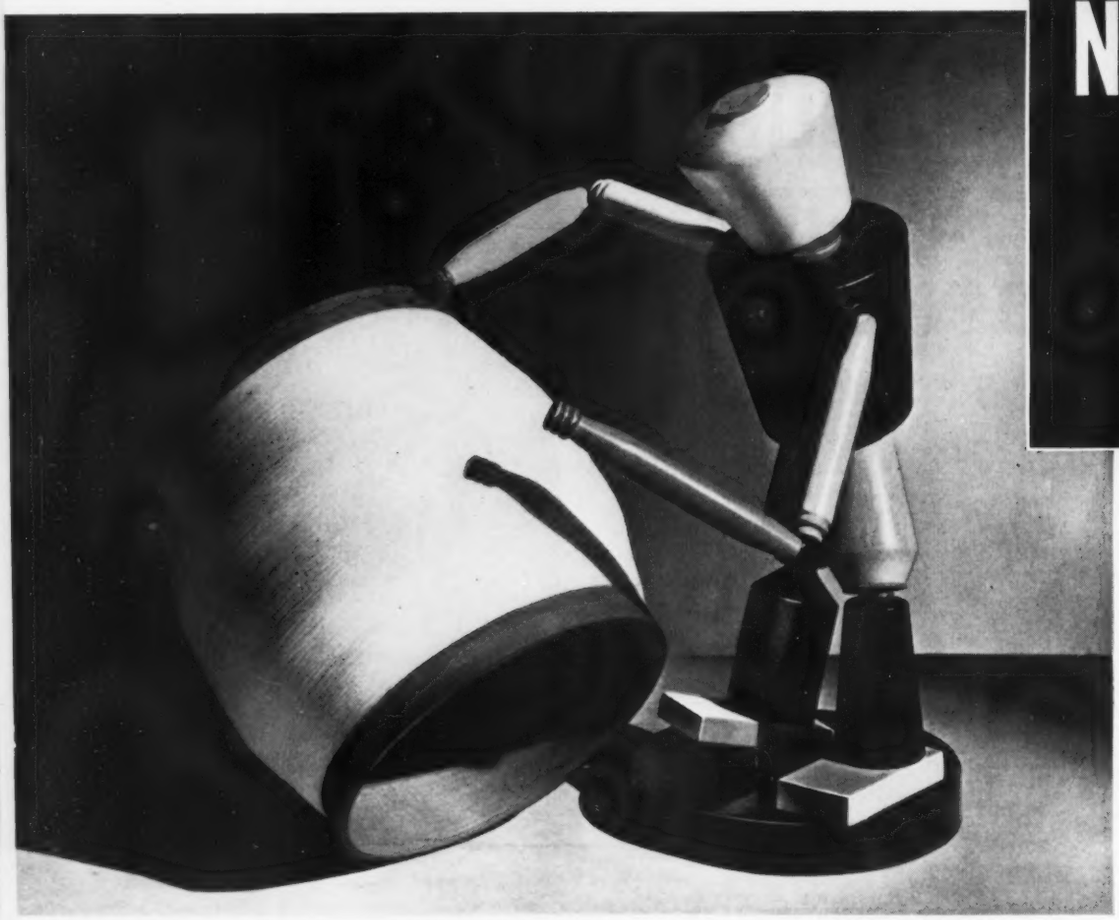
# FAFNIR

## Ball Bearings

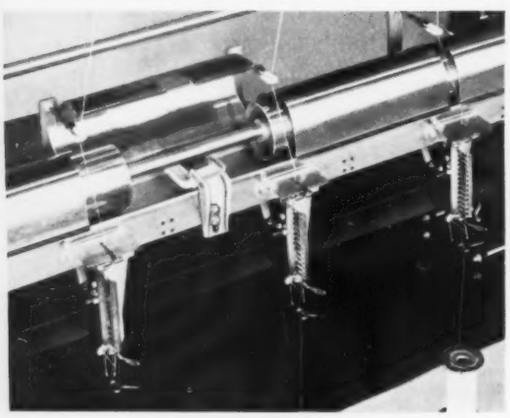
**THE BALANCED LINE—MOST COMPLETE IN AMERICA**

# NOW...TUBES OF NYLON

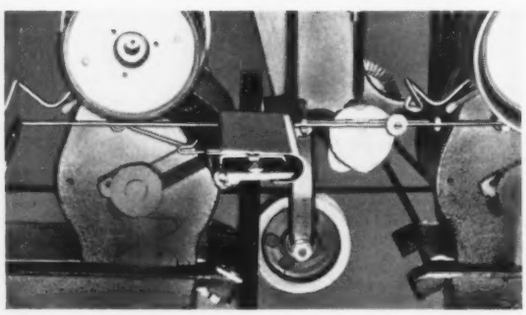
# Wound on New Universal Sizing Machine



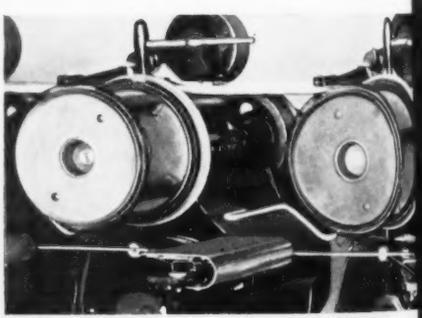
The new Universal Sizing Machine for Nylon incorporates the Pineapple Cone Attachment and an oscillating traverse control which produces tubes with tapered selvedges. These tubes need not be rewound to prepare them for coning.



All parts of the Sizing Attachment are stainless steel and are designed for easy cleaning. Yarn guides are quickly removed. The sizing roll is revolved and traversed at very low speeds.

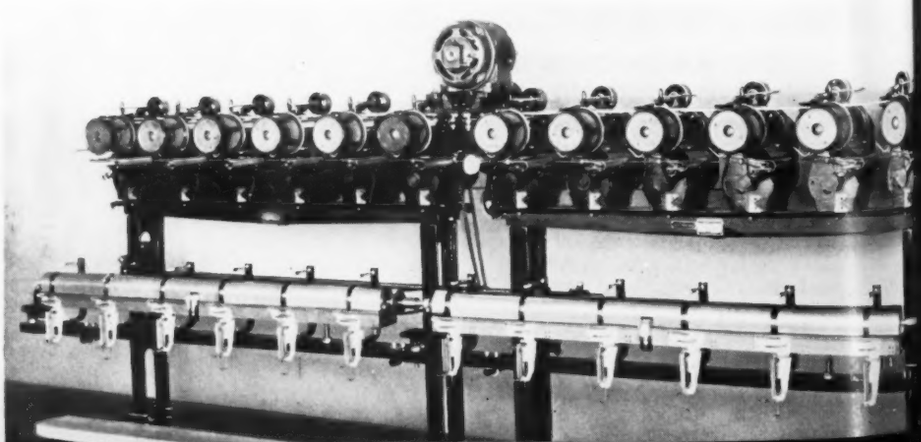


The heart-shaped cam controls the thread guides for all 12 spindles. The yarn traverse on the package is alternately shortened and lengthened to build a tube with tapered selvedges.



The special holder which grips the sizing tube can be collapsed and expanded by a lever attached to the starting handle. This permits the operator to load and doff quickly and without fatigue.

Sizing machines can be lined up in rows and connected to a central circulating system. Strip heaters can be added for drying the yarn on the sizing tubes, and a special two-end attachment can be used for small packages.



LEESONA

*Reg. U.S. Pat. Off.

**UNIVERSAL WINDING COMPANY**

PROVIDENCE, RHODE ISLAND

# THE OVERSEERS' CORNER

## "GOLD BRICK" BASKETBALL PLAYERS

A PETE & BILL DISCUSSION

"Yes, blast your hide, young man, you can go if you must! But whether you're out of this department three hours or three days, I've still got to find someone to take your place!"

Bill, who had been letting fly a stream of profanity without repetition for fully five minutes, concluded with the above remark. Jamming his hat down on his head, he stalked out of the department.

Pete overheard the last part of the conversation and grinned to himself as he caught up with Bill. "Wonder what's eating the old boy now?" he thought.

"It's that basketball practice again!" hollered Bill, glancing at Pete out of the corner of his eye, but hardly turning his head as he strode toward his office. "The management thinks that a basketball team is more important than production. During the season they take two of my best men several hours a day and make no provision for replacing them. The other workers have to absorb their work or it goes undone. It's not fair."

"In some ways you are right, Bill," said Pete. "However, you must realize that times are changing and the overseer at times must make sacrifices in order to maintain good employee relations. I think it helps morale to have a good basketball team. Most of the people in my department are so enthusiastic about the team they can hardly wait for the home games. They don't resent the players leaving early."

Jamming on his hat, he stalked out

"You're nuts, Pete. All it does is disrupt production. Think what will happen if we get a baseball team and a football team and—a ping pong team—going all at the same time! Who'll be left to run the machines? The army already has taken several of my best workers and if the basketball team takes several more, who's going to do the work? If they want a basketball team, I say let them hire a bunch of professional players who have nothing to do with working in the mill."

**Do mill athletics disrupt operation?**

# Letters from Readers

## Keep Up With Repairs

**"Superstitions & Shutdowns"**
**Pete & Bill, Dec. 1940**

Editor, Overseers' Corner:

We should give more attention to the machines in our department and get them fixed before they need fixing. I mean by that when we observe a machine that is not up to par and that does not sound exactly right, we should have it gone into right away and put in first-class running order. It will save in dollars and cents, and in production which we are sure to lose if we do not give these little, or which seem little, things our attention.

A. B. B.
(*North Carolina*)

## Out With Political Cliques

**"Clannish Second Hands"**
**Pete & Bill, Feb., 1941**

Editor, Overseers' Corner:

Bill's attitude of *laissez faire* toward the political situation in his mill is of little help to Pete, who, we think, is trying to do the right thing by a deserving employe.

Mill politics have kept more good men down and poor men up than any other single factor in the business. It is one of the greatest sources of invisible loss that any mill has to contend with. By means of politics, departmental blunders are covered up, production standards engineered to a convenient level of effort, and personal grudges are worked off on company time and with company property. The political clique we will have always with us, but if the situation in Pete's department is such that the second hands are led to believe that they are running it, then Pete's fate

**CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.**

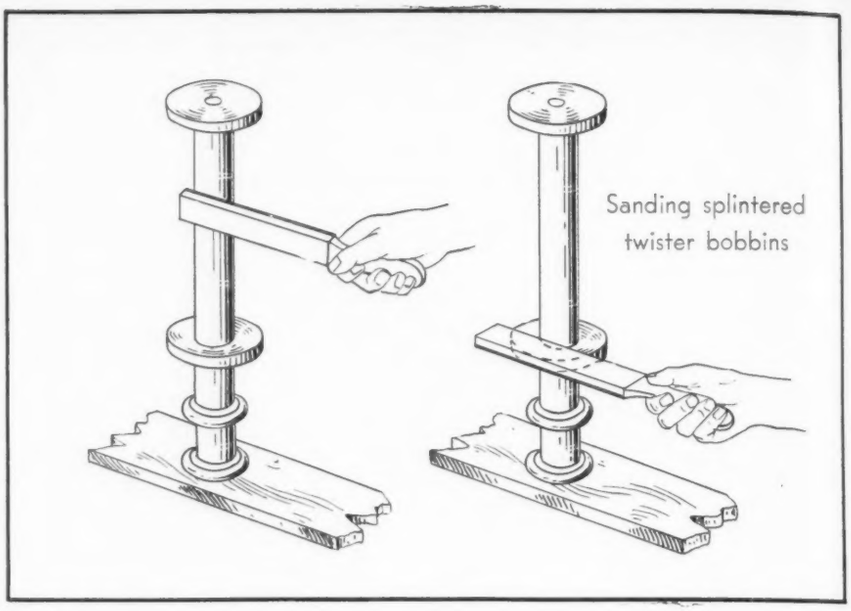
is sealed. In fact his dilemma is already apparent—he is wondering what he had best do.

It is time that the selfish motives of his second hands be given a set-back. The man they are putting up is doubtless already "trained" in the way he should go, and naturally they don't want to start all over again on somebody who may not agree with their ideas of right and wrong. The party man will slip easily into the routine and not ask disturbing questions—he knows the answers already—while the boss's choice may be primed for a little investigation into better production or higher quality.

Any super or overseer knows the value of departmental harmony but it also is true that the best of us need a little shaking up now and then to keep us on our mettle. It is human nature to resist change, and when politics in the mill become powerful enough, what passes for cooperation is merely lip-service. New ideas are given the run-around by the pressure-group, or are proved impractical, and only the chosen few are destined to rise.

We admit that this is looking at a pretty dark picture, but since Pete's case is a hypothetical one the reader may consider these views as presented in a similar vein. They are the sum of the possibilities if Pete doesn't watch himself and promote his own man. We all respect our boss if he is the boss.

LITTLE RHODY
(*Rhode Island*)



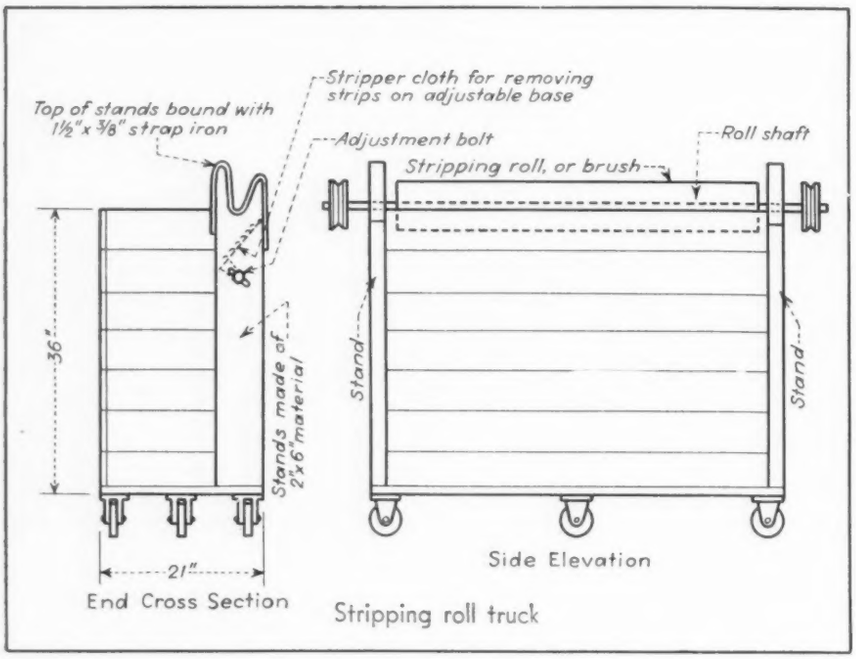

# Overseers' Practical Helps

## Truck for Cotton Card Roll Stripper

In every cotton carding department, regardless of how modernly equipped with air strippers, automatic strippers, or other types of strippers, it is still necessary to roll-strip cards before grinding, in order to clear cylinder and doffer clothing of motes and other imbedded trash. An important part of roll stripping equipment is the stripping-roll box, but in few cases does the problem of its replacement receive any attention until the old one is beyond use, or even beyond minor repairs.

The accompanying sketch shows a box of sufficient length to accommodate the roll and the set collars on the roll shaft. The stands are on the side of the box, making it possible for one man to clean the stripping roll while the second starts the machine just stripped or prepares the next one for stripping. This placement of the stands also increases the ease with which the box may be emptied. The stripper pad is hinged at the top of the box; adjustment bolts at the bottom provide a means of fitting the pad to the roll.

LAMAR FOGEL *(S. C.)*



Stripping roll truck

## Smoothing Splintered Bobbins

Our mill had a large number of wooden twister bobbins that were badly splintered but, otherwise, were in good shape. The heads were tight and the barrels were sound, but the splinters frequently caused injuries, and end-breakage in beamer creels was high.

Instead of discarding the bobbins, we had the carpenter make a small paddle-shaped board, as shown in the illustration, to which we fastened a piece of sandpaper. Worn bobbins were placed on the spindles of a twister and the frame started up. A spare hand, using the sanding board, quickly sanded down the rough and splintered places on each bobbin.

After sanding, the bobbins were removed from the spindles, given a coat of shellac, and were practically as good as new. —P. L. H. (*So. Carolina*)

# Color-Room Charts

## Basis of simple method for controlling procedure for cooking printing gums

By WILLIAM PAZ BRUNSON

IN A PRINT WORKS it is of utmost importance to have colors made from thickeners that are consistently the same. Gums cooked by guesswork will not give uniform results. Many forward steps have been taken in the methods of preparing printing gums, and the results have justified the time and expense entailed. The method described below of charting color-shop procedure has proved advantageous for two reasons: (1) more uniform results have been attained; and (2) the operatives are prone to be more thorough. With the use of the two charts shown here as a guide, a practical, efficient, and accurate procedure for cooking printing gums can be formulated. Assume that, through laboratory and practical tests, the formulation for a given gum has been determined, and that the gum has been designated as Vat Past No. 3. This formula will be incorporated in the standard instructions for the kettleman. As a kettle comes open and is ready for recharging, the kettleman will instruct his assistants to load it with 80 lb. of Gum No. 1 and 100 lb. of Gum No. 3, add the required amount of water, and stir for 35 min. At the end of the stirring period the cooking will start, and the assistants will report to the kettleman when they have turned on the steam. They will then be instructed to bring the temperature up to a given point within a certain time and to hold the temperature constant at a given point for a specified time. As each phase in the cooking is completed the assistants should notify the kettleman, who makes the notations on the kettle chart (Fig. 1). When the entire process has been completed and the kettle is ready to be discharged, the kettleman should personally check the paste to be sure that it is in line as to thickness, viscosity, and appearance.

The mix slip shown in Fig. 2 is used by the kettleman for giving instructions to his assistants. This slip gives the mix number, the kettle to be used, the type of paste to be cooked, and the volume. All instructions as to procedure are put on this slip.

The time-temperature chart shown in Fig. 3 provides a running record of what is happening in the kettle. A reading may be taken at any given interval. The accompanying chart shows readings at intervals of 10 min., starting with the cooking of the gum. Double entries are made when the additions of chemicals occur. This chart gives an accurate check to the way in which instructions are being carried out.

In the event a mix does not result in a paste of the appearance expected, this method of control will help one

Fig. 1

**KETTLE CHART** — Date 2/18/41

| Kettle | Paste | Load: Gum No.1 | Gum No.2 | Gum No.3 | Time total: Start | Stop | Time stirring: Start | Stop | Time cooking: Start | Stop | Time cooling: Start | Stop | Mix. No. | Operator & comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vat No. 3 | 80 lb. | — | 100 lb. | 3:30 | 9:00 | 3:30 | 4:05 | 4:05 | 6:00 | 6:00 | 9:00 | 35 | OK - Sh. R. |
| 8 | Vat No. 1 | 60 lb. | — | 75 lb. | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

Fig. 3

**TIME-TEMPERATURE CHART** — Date 2/18/41

| Kettle No. 1 | | Kettle No. 8 | | Kettle No. | | Kettle No. | | Kettle No. | |
|---|---|---|---|---|---|---|---|---|---|
| Mix No. 35 | | Mix No. 36 | | Mix No. | | Mix No. | | Mix No. | |
| Time | Temp. | Time | Temp. | Time | Temp. | Time | Temp. | Time | Temp. |
| 4:05 | 78 | | | | | | | | |
| 4:15 | 80 | | | | | | | | |
| 4:25 | 81 | | | | | | | | |
| 4:35 | 84 | | | | | | | | |
| 4:45 | 90 | | | | | | | | |

**MIX SLIP** — Date 2/18/41, 100 gals.

Kettle No. 1 — V. Paste No. 3
Mix No. 35

80 lb. gum #1
100 lb. gum #3
Wet out slowly and raise volume to 90 gal.
Add 30 lb. soda ash at end of cooking
Add 75 lb. Hydro at 140°F. cooling —
Cool to 95° F.

Fig. 2

to locate the trouble and remedy it before irregularities have an opportunity to appear in the print room.

In addition to insuring more uniform results, this method forms a sound foundation on which to make changes leading to improvements in the pastes in use. By varying only one item at a time, the result throughout the entire process can be accurately observed. Since it is becoming more and more important to keep color costs as low as possible, control of color shop kettles is certainly needed. The additional expense of using this method is practically nil.

# Improved Weave Room Efficiency

## Results when overseers achieve full cooperation of loomfixers and weavers

By STANLEY A. PROKUSKI

**WITH PERFECT CANDOR** it can be said that the fate of a mill rests upon the hands of its weavers. There is probably not a single really successful rayon weaving mill in which the weavers are below standard. Weaving of rayon fabrics is exacting and requires the weaver to exercise painstaking care. True as these statements may be, weavers, however good, are at a loss without proper loomfixing. There should be no minimizing the fact that to a large extent good loomfixers are the foundation for good weavers. It thus becomes evident that a large measure of cooperation between weavers and loomfixers is not only advantageous, but essential if an overseer is to realize the full possibilities of his department.

It can be readily seen, therefore, that efficiently running looms are an asset to both weaver and loomfixer. But this ideal condition cannot be attained if any antagonism between them exists, and it is the overseer's job to see that antagonism is supplanted by cooperation.

How can this cooperation be attained? The question can be answered only by an unbiased and frank analysis of the responsibilities of each. When this is done, it becomes evident that one of these is to keep the looms in good condition—a duty which is shared by both.

Overseers should point out to loomfixers and weavers alike that keeping running, for production's sake, looms which should really be stopped and repaired before a minor repair job becomes a major one, is not advantageous to either fixer or weaver. A small job will take but a few minutes to fix. A big job may mean hours during which the loom is out of production.

Loomfixers will be helped greatly if overseers convince weavers of the importance of always bearing in mind the following pointers. Starting a loom is a simple operation; but, because of an honest desire for more production, weavers in many instances overlook the basic principles necessary to start a loom and just pull the shipper. Such a procedure may prove to be the source of much trouble. If a shuttle is not entirely in the box when the loom is started, it will not receive the full benefit of the power behind the picking stick. This may mean that the shuttle will not reach the other box in time, causing the loom to bang off with the weaver still holding the shipper. The force of the bang-off plus the force of the driving power resulting from the shipper's having been held momentarily after the bang-off may damage the shuttle; loosen swords on the rocker shaft; break lay swords; break the crankshaft or loosen crankarms; break one or more teeth in driving gears; or loosen shuttle boxes and cause chronic bang-offs, kinky filling, slack filling, or mis-doffs.

It is also likely that, because the shuttle was not entirely in the box when the loom was started, the filling feeler will be put into motion and indicate for doff. For reasons already stated, the shuttle will not box correctly when transfer occurs and further damage results.

Damage of the same nature may be expected if looms are started when the check strap on the opposite side of shuttle is not in position to check fully. A loom started in this manner causes the shuttle to rebound excessively. This rebound may be so great as to throw the shuttle back into the shed. A shuttle thus trapped may also cause a smash or a broken reed.

Starting up of looms that have stopped for no apparent reason should be done carefully, especially when a shuttle has been trapped in the shed. A quick examination should be made to see if a check strap, picker, picking stick, or lug strap is broken; if a heel strap or pick arm is loose or broken; if a pick roll or cam is loose or missing; if there are any obstructions or loose binders in the shuttle boxes; or if harness straps and connections are broken. Starting the loom when any of these conditions exists may cause further damage.

Weavers should be instructed to report to loomfixers any seemingly unimportant defects in cloth being woven. This procedure often permits the loomfixers to prevent the occurrence of more serious trouble.

Weavers should also make a periodic inspection of shuttles. Any shuttles showing signs of roughness should be sanded smooth. Shuttles which continually become rough or unevenly worn should be reported to the loomfixers, as they may indicate a serious loom condition in need of prompt attention. The condition of fur should be checked; loose, unglued, or worn fur may be the source of cloth imperfections that could be easily eliminated.

The loomfixer should be notified if the loom brakes do not stop the loom in proper position for drawing in broken ends. Loose or worn brakes will not act correctly, and the momentum of the loom will carry it over from a part pick to several picks before stopping completely. As a result the loom probably will not be in the proper position for starting. Also, because of the gradual loss in power, the beat-up may be too light, causing cracks, thin places, or starting marks in the cloth.

**THE WEAVER**, being in constant attendance at the looms, is in a position to know whether cleaning and oiling are done regularly and thoroughly. If it is not the task of the weavers to oil or clean, it certainly is the weaver's duty to see that these things are done. Lack of grease or oil adds to the burden of the loomfixer and penalizes the weaver by the unnecessary wear of parts and consequent need for replacement. The main problem which the overseer must solve in obtaining loomfixer-weaver cooperation is to persuade the loomfixers that it will be beneficial to them in the long run. They probably will object that the plan suggested above would mean more work for them. Accordingly it should be frankly admitted that for a short time the loomfixers will be rushed to extremes. It should be explained, however, that as the small faults are gradually corrected the big jobs will become fewer, and the loomfixers will have more time to devote to inspection of looms and to preventive maintenance aimed at correcting faulty conditions before they become bad enough to cause trouble.

# Continuous Boil-Off

## Prevents cracks and breaks in alpacas, romaines, and other ply-yarn fabrics

By PHILIP Le BRUN

**BETTER-GRADE FABRICS,** such as alpacas and romaines, have usually been boiled off on sticks. Regardless of how carefully the material is handled in this manner, there are always a few pieces in each lot which have cracks or breaks. To prevent these defects, various methods of pretreating have been devised; however, they all tend to increase the labor cost and at the same time slow down production. A means of handling such fabrics in a continuous unit at a much lower cost was developed several years ago, but has been kept more or less secret up to now.

The necessary machinery for the continuous process consists of a full-width boil-off tub equipped with a large wetting-out drum and a traveling conveyor, as shown in the accompanying sketch. Practically every modern dyehouse has at least one such machine. However, several minor changes are necessary in the machine to make it applicable for this particular type of boil-off. The usual machine is originally heated by means of a live steam pipe. The liquor is then kept at a specific temperature by use of a closed coil located on the floor of the tank under a false bottom. The liquor tends to flow upwards along the center of the tank and then down again at the sides and ends. A current such as this will curl the selvages of a cloth going through the tank and thus cause objectionable "railroad tracks," or long sharp creases or breaks in the fabric which run parallel to the selvage and then end by going off obliquely into the selvage. Two additional closed steam coils placed at the sides of the tank (as shown in one of the detailed drawings) will do away with the upward current and keep the boil-off liquor at as near a uniform temperature as is possible.

A second kind of break is caused by wrinkles going from edge to edge at approximately right angles to the selvage. This is prevented by the method of setting the cloth at the start. Before going through the unit, the material is sewed to a long cotton leader and is beamed up on a shell. It is then drawn by draw roll *B'* from cloth roll *E* over the large drum *B* under the cascade box *D*. A steady stream of boil-off liquor flows from the latter at a temperature of 190 to 205° F. The cloth which is kept free from wrinkles by means of the knurled roller *C* shrinks almost immediately. Roll *B'* and drum *B* are driven by a variable-speed drive. As the cloth is kept flat against the large drum *B* by means of the slight tension applied at *E*, it cannot wrinkle and, therefore, must shrink evenly.

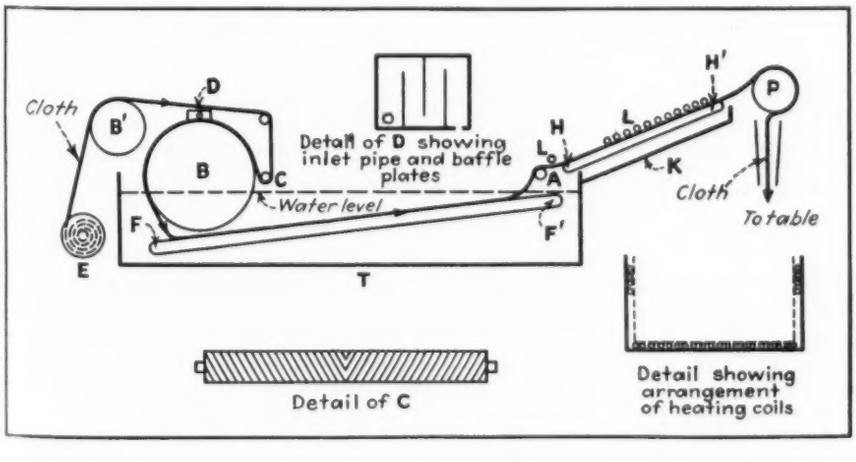
The conveyor speed is so regulated that the fabric is picked up at same rate of speed that it is released by drum *B*. The speed relationship of the conveyor and drum must be carefully watched. If the conveyor *F-F'*, driven by a second variable speed drive, is run too fast, the cloth will not be fully shrunk and will tend to shrink further during the dyeing process. Since the dyeing is done in the rope form any additional shrinking will result in crow's feet, breaks, etc. If the conveyor is run too slow, the cloth will ripple on to the conveyor instead of lying flat on the net. Since the additional shrinkage after the initial shrinkage occurs while the cloth is carried from *F* to *F'*, any ripples in the fabric will result in horizontal breaks across the material. Both of these potential defects can be recognized and prevented by watching the machine carefully at a point just below the large drum *B*. If the conveyor is going too slow, the fabric will show up as a series of floating ripples. If the conveyor is going too fast, the material will tend to pull to the surface of the liquor at this point.

Carrying net *H-H'* takes the cloth from net *F-F'* and delivers it over roller *A* to the plaiting device *P*. A series of pipes *L*, over the net sprays the cloth with cold water and sets the shrinkage so that no further breaks will occur. Waste water is caught in catch pan *K*.

The percentage of shrinkage in a cloth is determined by the ratio between the speeds of drums *B'* and *P*. The surface speed of drum *P* is usually 20 to 30% slower than that of drum *B'*. The speed of the different drums is originally determined by accurately measuring 1 yd. of cloth before and after boil-off. This determines the natural shrinkage. To obtain a piece of goods free of breaks it is necessary to get a full natural shrinkage before setting the fabric with cold water.

The tank *T* is filled with the same type of bath used for the older style hand or hank boil-off. For best results, the boil-off bath should be maintained at a temperature of at least 200° F.

While the continuous boil-off method outlined above will produce alpacas and romaines free of breaks before dyeing, a few simple precautions are needed to prevent formation of these defects in dyeing. First, the dyebath should be brought to a temperature of at least 80 to 90° F. before loading the cloth. Second, the dyeing temperature should be raised slowly so that it does not reach its maximum for at least 40 min. Third, the maximum dyeing temperature should be definitely lower than that used for boiling off the fabric—about 180° F. maximum. Fourth, when the correct shade is obtained, the material must be cooled off gradually by flooding the dye beck with cold water, and not by pulling the plug and then washing immediately with cold water. If it is necessary to soap the goods before dyeing in order to remove exceptionally heavy sizing not eliminated by the rapid boil-off, the same precaution should be taken as regards raising the temperature slowly and cooling the bath gradually.




Modified continuous boil-off unit cuts costs and prevents defects

# QUESTIONS & ANSWERS

## Knitted Fabric Shows Lines

*Technical Editor:*

*We are having trouble in knitting a fine ratine yarn. A piece of the fabric is inclosed; in it you will note certain lines. Is the manufacturer of the yarn to blame for these, or do they come from some other source? We would very much appreciate your opinion as to the cause of this defect, and how it can be eliminated. (8766)*

Finding the cause of this trouble from a piece of the finished cloth, without any other information, is difficult. However, a check on the stitch length shows this to be quite uniform. If the cloth were piece dyed, the trouble would probably not be due to uneven dyeing. We assume, though, that it was not piece dyed, but made up from dyed yarns. In this case there is a possibility of varying shades in the dyed yarn.

If you can advise whether the fabric was dyed in the piece, the number of feeds used on the knitting machine, whether this trouble is encountered with other shades, and any other information relative to the manufacture of the cloth, it would be of some help in tracing the source of the trouble.

## Uneven Cotton Roving

*Technical Editor:*

*In our cotton mill we are having trouble with uneven roving and consequently uneven yarns. The staple and the quality of the cotton appear to be good, but the carder claims that it is too dry. We are using cotton that has been in Government storage for 5 or 6 years and there is a possibility of its having dried out in this length of time. Should the lack of moisture in the cotton result in uneven roving? (8769)*

In the last few years, there has been an increase in the use of dryers in cotton gins, and while we have no record of cotton being overdried, it is a thing that might happen. If abnormally dry cotton is baled, there is little chance for it to pick up moisture in any good storage warehouse.

It should be fairly easy to determine whether or not the cotton is abnormally dry. A sample taken from the center of a bale just as soon as it is opened may be tested for moisture content. Normal bales vary from 8 to 12% regain.

Dry cotton does not process well in any of the machinery from carding on, but most mills have humidifiers which should bring the regain back to normal. However, without proper humidification in the mill, cotton that is too dry can easily produce uneven sliver at the card, and the unevenness will carry through to the following processes, possibly getting worse.

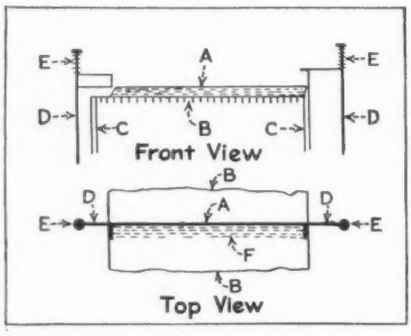
Dry cotton is affected by static electricity, and any static formations tend to produce unevenness in any of the operations.

## Back-Sizing Velvets

*Technical Editor:*

*We are wondering if it would be possible for you to furnish us with information on the various methods for the application of sizing or stiffening to the back of velvets and also the ingredients commonly used. It would be a great help if you could send a sketch showing the set-up for applying size to the back of the cloth. We are somewhat acquainted with this process; however, by having more information from another source, it will greatly assist us in this matter. (8794)*

There are a number of methods used for back-sizing pile fabrics. The most common method in use consists of a doctor blade so fastened as to leave a very thin layer of size on the back of the cloth as it passes underneath on a pin frame. The cloth face down, as in the sketch, next goes into a heated housing or dryer. The ingredients most frequently used are solutions of latex thickened with gum tragacanth. As the latter usually is acid in nature, and since latex solutions are precipitated by acids, it is customary to add a small amount of ammonium hydroxide to any such size mixture. If brown glue is used for back-sizing cheap pile fabric, it is customary to add a small percentage of formaldehyde to render the former insoluble and also to prevent mildew.




In the sketch *A* is the doctor blade; *B*, cloth; *C*, pin frame; *D*, support for blade fastened to frame or to floor; *E*, screw to adjust blade height; and *F*, size poured on cloth in back of blade.

## Baby Shawl Construction

*Technical Editor:*

*We desire to make baby shawls of the following construction: Warp—2/26 worsted, 800 yd. in length, 18½ dents per in., 35-2/3 in. in reed, 660 ends in warp. Filling—2/26 worsted zephyr, 18 pick wheel, 762 picks per shawl (approx. 42-1/3 in.). Finished size and weight: 31x31 in.; 2 lb., 6 oz. per doz.*

*Warp yarn costs $1.73½ per lb.; filling $1.60 per lb. Will you please show us how to calculate: (1) pounds of warp yarn required to make an 800 yd. warp; (2) pounds of filling required to weave same; (3) cost of yarn, per shawl and per dozen. (8712)*

In the absence of specific information relative to weave employed and actual take-up in weaving, the following calculations are based on the assumption that plain weave is used. Cost figures are shown for four degrees of take-up in weaving.

Warp requirements in pounds are obtained by the following formula: (Ends per in. × loom width × yd. dressed) ÷ (count × standard). Or: (Ends in warp × yd. in warp) ÷ (count × standard). Thus: (660 ends × 880 yd.) ÷ (13 × 560) = 72.5 lb.

The formula for ascertaining filling requirements follows: [Picks per in. × loom width × yd. in warp × (1.00 − % take-up)] ÷ count × standard). Thus: (18 × 35.67 × 800 × .97½) ÷ (13 × 560) = 68.8 lb.

The above is based on 2½% take-up. To compute weight of filling required with a different take-up, it would be necessary to substitute the appropriate figure for .025. The pounds of filling required at 5, 7½, and 10% are, respectively, 67, 65.3, and 63.5 lb.

By dividing the woven length of the entire warp by the woven length of one shawl, we obtain the number of shawls per 800 yd. warp. For instance, each shawl is 42.33 in. in length. Therefore, assuming the take-up to be 2½%, the woven length would be 780 yd. This would give a yield of approximately 663 shawls. From the above warp and filling calculations, one can easily calculate fairly accurately the yarn cost. The warp required is 72.5 lb. at $1.73½ per lb., or a total cost of $125.79. At 2½% take-up, 68.8 lb. of filling yarn would be required at $1.60 per lb., or a total cost of $110.08; 780 yd. of woven cloth ÷ 42.33 in. = 663 shawls. This divided into the total yarn cost equals 35.6c. per shawl or $4.27 per dozen.

For higher percentages of take-up, the pounds of filling required decreases,

as does the total woven yards and the number of shawls which can be obtained. At 5% take-up, an 800 yd. warp would yield approximately 760 yd. or 646 shawls costing 36c. each or $4.32 per dozen. At 7½% take-up the same warp would yield 740 yd. or 629 shawls costing 36.6c. each or $4.39 per dozen. At 10% take-up, the warp would yield 720 yd. or 612 shawls, costing 37c. each or $4.46 per dozen.

As previously stated, the above computations are based on plain wave and a specified take-up in weaving. Any modification in either of these factors would require adjustment in the calculations.

## Defect in Rayon Crepe

*Technical Editor:*

*We are sending you inclosed two swatches of material for inspection. Please note what appears to be damaged and pulled out crepe in the filling yarn, which consists of one end of viscose crepe combined with one end of acetate. Can you tell us the cause of this condition and how to correct it? (8784)*

Examination of the samples indicates that the twist of the combination yarn and construction of the fabric are satisfactory. It is our opinion, therefore, that the trouble is due to a shuttle condition which is resulting in too much tension on the yarn. It may be rather difficult to detect the exact cause of the difficulty, but the following suggestions may be of help to you.

Be sure there is no binding of the quills on the sides of the shuttles. Make certain that the spindles are in line with the porcelain guides and that the yarn is not binding on the fur. Also be sure you have a steady, even pull from the start of the quills to the finish.

## Trouble in Fulling

*Technical Editor:*

*We inclose two samples of fulled fabric, details as follows: Properly fulled—this fabric is satisfactory for quality and evenness of fulling, and is the standard used by the purchaser. Poorly fulled—this represents our fabric. You will note it seems to show uneven, heavily fulled lumps; and thinner spaces. It is not so smoothly or levelly fulled as the standard fabric. The warp and fulling also appear to have been pulled and distorted. They do not run as nicely parallel as the standard fabric. It is our impression that these problems are possibly due to some trouble in our fulling, but we do not seem to be able to correct it. Can you help us on this? (8767)*

Your impression that the problem is due to trouble in the fulling seems to be correct. The poorly fulled fabric shows that emulsification has been far from perfect. This can be caused by a soap solution too light in body to absorb the grease and dirt and carry it to the end of the shrinking period. A great deal depends on the type of wool lubricant used in the picker house when the blend is laid down. If a mineral oil emulsion is used, emulsification may not be so easily accomplished as with an animal or vegetable oil. To overcome the trouble use a more concentrated soap solution, with a reduction in the amount of alkali. For example, if the fulling solution is made up, say, of 6 oz. of soap and 4 oz. of alkali per gallon, it may turn quickly into a thin, watery solution if the stock was lubricated with a mineral oil compound. As a result, proper felting will not be obtained. Changing the formula to 10 or 12 oz. of soap with only 2 oz. of alkali should result in good fulling and even felting.

## Comparative Costs of Taffeta

*Technical Editor:*

*Please let us know what the difference in cost should be on following constructions of acetate taffeta: 180 x 52 and 180 x 54, both 75-den. warp, 300-den. dull filling. (8798)*

Warp preparation costs should be the same unless time work rates apply, in which case the 180x54 will cost slightly more, due to decrease in cloth production. However, this item is a neglible one. The principal difference lies in the filling yarn costs; others to be considered are weave-room, power, and overhead.

Although the highest increase at most is under 4%, a safe rule is to use the 52-pick style as a basis and add cost allowances as follows: filling yarn 4%, weave-room 4%, power and handling 3%, and overhead (including repairs) 3%.

Due to various weaving costs and prices of yarn, an exact figure cannot be calculated without knowledge of all details; the same with quilling, picking, and inspection costs. If these departments work on time rate, they slow down or speed up accordingly, so that the greatest difference would be in cost of yarn and labor cost in weaving. In some localities, the later item varies from 0.003 to 0.012—differing nearly 0.0175¢. per yd. However, the actual difference in cost between the two constructions should amount to between 0.0035 and 0.0045¢. per yd.

## Producing Glove Cloth

*Technical Editor:*

*Inclosed is a piece of black glove cloth made in a foreign country, having the trade name "Duplex" or "Morocco." We would appreciate it if you could tell us the size and kind of yarn used. Also, whether a double or single needle bar is used on the warp knitter. What is the probable gage? Do you have any idea what such fabric costs per yard and how wide it is made in the United States? (8768)*

To tell definitely the size of yarn used in this sample is difficult. Our opinion is that it is 100s Egyptian. On the standard tricot machine there are two needle bars, but just one may be used if so desired. The bulk of the so-called standard tricot machines are 28 gage although there are a few with finer and coarser gages.

Cloth produced in this country of somewhat similar construction is sold at approximately $1.50 per sq. yd. Finished widths doubtless vary, but most of these fabrics will be found to be about 44 in. wide finished.

This sample was made on a double woven machine, of which there are but few in this country. The American-made comparative cloth on which the price is quoted above, is also made on the so-called double woven machine. Most American cloths of this type are, we believe, made of 80s yarn.

## Nubs Break Up in Carding

*Technical Editor:*

*We are making a 1.8 typp (1.13 run, 6-cut) all-wool yarn with large nubs and slugs. We are having considerable difficulty with the nubs, as they break up during carding, and we should like to know how others handle the problem. We believe the best way is to use a nub box, rather than to introduce a nub near the beginning end of the carding operation. However, we do not have such a box. If you can tell us how to build a box of this type, we will appreciate it. Also, we would like to know how the nubs should be put in without a nub box. (8765)*

Either your nubs and slugs are too soft, or your card set too close for this kind of work. The workers of the card (including the breast workers) should be set off by placing pieces of single leather belting under the worker boxes, the number of workers set off depending on the hardness of the nubs or slugs and the prominence with which they are required to show in the roving. When a nub box is not used the nubs or slugs should be mixed in the lot at the picking operation.

A nub box can be built to fit over the top worker of the second or finisher breaker. It should be the width of the card, and of sufficient size to hold the required amount of nubs or slugs. The bottom of the box should be open and the sides should slope V-shape to a small-diameter roll fastened at the bottom and covered with feed-roll clothing. This roll removes the nubs from the box, and the worker moves the nubs from the feed roll to the card. The speed of the feed roll and worker regulate the amount of nubs delivered; best speed should be determined by trial.

# LOOMFIXERS' MANUAL

## COTTON SECTION—Chapter XV—Continued

By IVAR MOBERG

### Box Motions

**BOX LEVELING** includes squaring and pitching of the box floor, adjusting for correct box lift, and positioning the boxes at the proper height. The procedure is as follows:

First check the square of the box floor and walls, using a small square. Boxes are of malleable iron and can be straightened if necessary. Next, give the boxes a slight pitch, 3/32 in. in 18 in., toward the raceplate. On later type looms this pitch of the boxes is obtained by turning adjusting screws, but on older models the pitch must be obtained by bending the lifting rod slightly, when necessary. Check to make sure the boxes slide freely up and down to the limit of their movement.

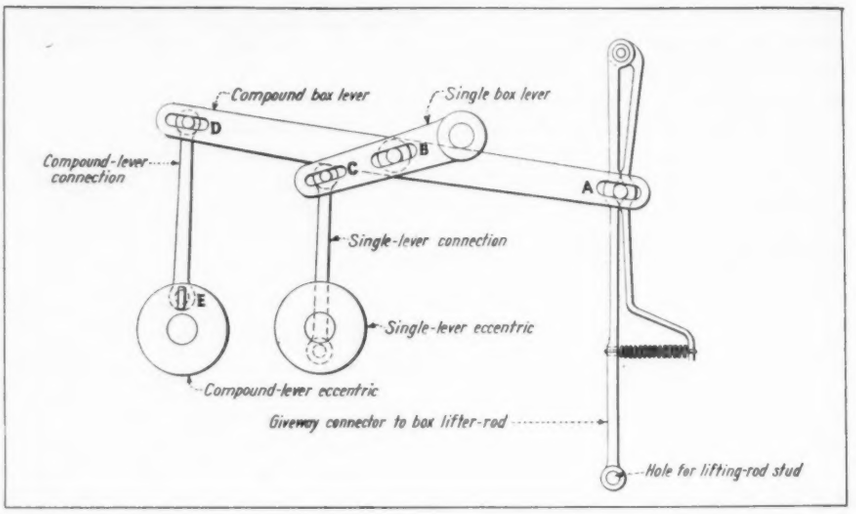



Fig. C92. Positive box-motion arrangement

Fig. C92 shows a positive box-motion arrangement, such as is commonly used in cotton weaving. The single- and compound-lever eccentrics are mounted on the inside end of the shaft carrying the front and rear plunger gears previously referred to (March 1941, page 101). The eccentrics therefore move in unison with these plunger gears, turning one-half revolution at a time. The single-lever eccentric, which has no throw adjustment, is for single-cell lift, controlling the change from first to second and from third to fourth boxes, and vice versa. The compound-lever eccentric, on which the throw is adjustable, is for double-cell lift, controlling the lift from first to third and from second to fourth boxes, and vice versa.

There are in all five adjustments—marked *A*, *B*, *C*, *D*, and *E*—on the motion shown in Fig. C92. Adjustment at *A* will affect lift on all boxes, adjustments at *B* and *C* will affect first and second boxes, and adjustments at *D* and *E* will affect first and third boxes.

Before commencing leveling of boxes all adjustable studs should be placed in the centers of their respective slots. Turn the loom until the lay is in the position it will occupy when a shuttle is picked out of a box. This is about halfway between top and back centers. Theoretically there should be no difference, whatever the position of the lay, when lining up the boxes. However, if the center of the lifting rod stud is not exactly in line with the center of the rocker shaft, a slight up and down movement of the boxes occurs when the loom is running. So long as the boxes are at the correct height at the pick, this slight up and down movement does no harm other than to reflect upon the mechanical ability of the loomfixer.

Now, while pressing a 12 in. straightedge on the raceplate, so adjust the height of the first box that it can just barely be felt when the straightedge is pushed over the edge of the box floor. This adjustment is made by means of the nuts and threaded portion on the lifting rod. Nuts must always be tight when checking height.

Bring the second box into operating position and check its height with the straightedge. If the box is too low, move the stud shown at *C* nearer the lever pivot; if it is too high, move the stud in the opposite direction. Return to the first box and readjust its height, which was disturbed by moving the stud at *C*. Go back to the second box and check its height with the first. Repeat the operation, if necessary, until first and second boxes come to the same height in relation to the raceplate. The adjustment at *B* should not be used, unless that at *C* is insufficient to get the correct single-cell lift. If the adjustment at *B* does have to be resorted to, the stud should be moved in the slot only once; to the left for greater lift, and to the right for less lift. Then make further necessary adjustments at *C*.

When the first and second boxes have been adjusted to the correct height, bring the third box into operating position and check its height with that of the first. If it is too low, move stud *D* to the right; if too high, move the stud to the left. Return to the first box and set it to the raceplate. Bring the third box again into operating position, and recheck its height with that of the first box. Repeat the adjustments, if necessary, until the height of the third box corresponds to that of the first.

Make no adjustment at *E*, in throw of the eccentric, unless the adjustment at *D* is insufficient to obtain the correct lift of the third box. If it is necessary to change the throw at *E*, move the stud once; farther away from center for greater lift, and near the center for less lift. Then make further necessary adjustments at *D*.

If the correct lift of the second and third boxes has been obtained, the lift of the fourth box must also be correct, since this lift is the result of the combined lift of second and third boxes. There can be no adjustment of the fourth box without disturbing the lift of the second and/or third boxes. It should be borne in mind, when leveling shuttle boxes, that if they are low going up, the lift is insufficient; but if they are low going down, the lift is too great.

The adjustment at *A* affects the lift of all four boxes and is not, therefore, used in leveling. Its purpose is to increase or decrease the lift of all boxes when the capacity of the adjustments has been exceeded, which is rarely the case.

# WOOL SECTION—Chapter XI (Concluded) and Chapter XII

By EUGENE P. SCHREMP

## Motor Drives

**IN THE LAST** installment (Feb. issue, page 141) a discussion was begun regarding replacement, when necessary, of a friction plate or friction-gear pinion. It was pointed out that great care should be exercised in removing the inside bearing next to the pinion gear.

The best method is to first remove the outside bearing. This bearing can easily be taken off with a gear puller. There is a step collar on this shaft, used to adjust the bearing so that there will be no end play in the auxiliary shaft. By placing the gear puller on the step collar, danger of damaging the bearing cone will be eliminated. After the bearing and collar have been removed, the friction gear will slide off the shaft. The friction plate is keyed to the shaft and can be removed in an arbor press or with a good gear puller. The pinion gear is also held with a key and can be removed the same way as the friction plate.

It should be noted that there are three shoulders on the auxiliary shaft. In replacing these parts, the pinion gear should be pressed on the shaft flush with the shoulder. The friction plate should also be pressed up to the pinion gear so that there is no space between the gear and the plate. It is important that the friction plate be up to the end of the shoulder of the auxiliary shaft; otherwise there will not be enough room for the friction gear. After the friction gear is put on the shaft, the step collar and the tapered roller-bearing should be pressed onto the shaft.

In replacing the assembly in the loom, it will be easier to replace the unit if the friction adjusting turnbuckle is loosened. The grease retainer plates should be on the bearings, and then they will slip into place. If there is any end play in the auxiliary shaft, the step collar can be used to pull the bearing to the desired position. After all parts have been tightened and the bearing properly lubricated, the motor should be replaced, care being taken to have the teeth meshing properly. It is important on these drives not to have the motor set in too far toward the loom side, as the motor gear will rub on the plate part of the friction gear.

To change the loom speed with a compound drive such as used on the W1 and Verybest looms, it is necessary to change the motor gear. A larger gear will increase the speed; a smaller gear will decrease it. To calculate the number of teeth in a motor gear for a given loom speed, this formula can be used: W1 and Verybest looms: (Loom speed wanted $\times$ teeth in friction gear $\times$ teeth in crankshaft gear) $\div$ (motor speed $\times$ teeth in friction gear pinion) = teeth in motor gear. Example: $(128 \times 123 \times 39) \div (1160 \times 18) = 29.4$. In this instance, a motor gear with 29 teeth would give us approximately 128 picks per minute. To find the teeth in the motor pinion for a desired speed, use this formula: (Loom speed wanted $\times$ teeth in friction gear) $\div$ (motor speed) = teeth in motor pinion. Example (W2 loom): $(132 \times 146) \div 1160 = 16.6$. This indicates that a motor gear with 16 teeth will give approximately 132 picks per minute. Example (W3 loom): $(132 \times 192) \div 1160 = 21.8$. Therefore, a motor gear with 22 teeth will give approximately 132 picks per minute.

In calculating speeds, etc., of motor-driven looms, reference should also be made to the plate which is on each motor and which contains such information. Different makes and types of motors run at different speeds.

**DRAPER CORP. DRIVES** applicable to woolen and worsted looms have been covered in the Cotton Section of the Loomfixer's Manual in Chapter III (Feb.-June, 1938, issues). Readers are referred to that chapter for data on these drives.

## Shipper and Brake Mechanisms

**CROMPTON & KNOWLES** W2 and W3 looms have a link locking device on the shipper and brake handles. The shipper shaft runs through a steel tube; this tube is used as a brake shaft. The brake tube, which is in two pieces, is held together by a connector in the center of the loom. There are brake handles at each side of the loom. The friction handles are held to the shaft by a key and setscrew. The brake handles are clamped to the brake tube; they can be adjusted by loosening the capscrews in the brake-handle cap. There is also a setscrew in the top half of the cap; it is used in adjusting the links. Reference to Fig. W15 will make clear the location of various of these parts.

Friction adjustments on older type W2 looms, which do not have a self-contained clutch, is by means of a turnbuckle, which is tightened to increase the friction. This method is also used on W1 or Verybest looms.

To adjust the friction W2 and W3 looms which are equipped with a self-contained clutch, it is necessary only to turn the setscrew in the top of the yoke, provided the loom has been properly assembled. Usually $\frac{1}{8}$ to $\frac{1}{4}$ of a turn is enough to obtain the proper amount of friction. Before the setscrew can be turned the locknut must be loosened, and care should be taken not to tighten the locknut too tight. This setscrew is case hardened and will break if too much pressure is used. It is important not to have the friction too tight, as excessive wear on the throwout bearing and friction plate will result. Too much friction will also cause the shipper handle to lock and not throw off properly.

*(To be continued—Editor.)*

*Illustration courtesy Crompton & Knowles Loom Works*

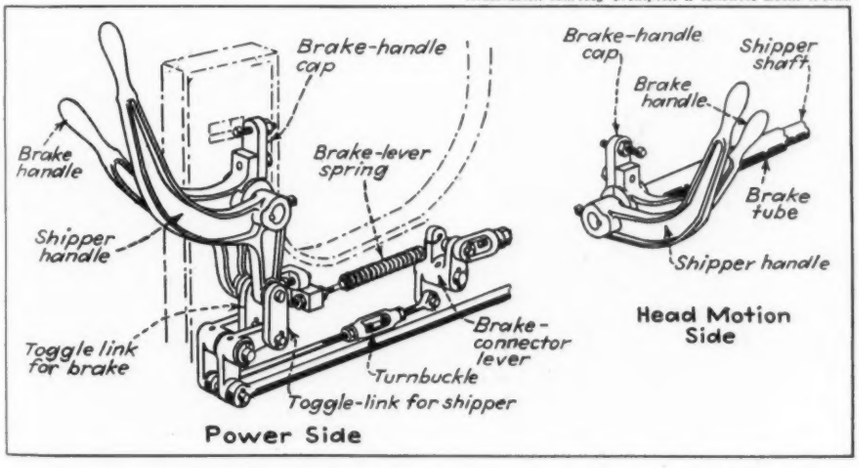
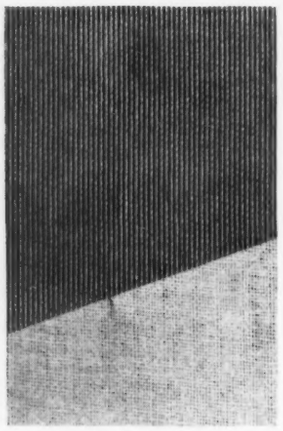



Fig. W15. Shipper and brake-handle parts on C.&K. W2 and W3 looms

# STAPLE COTTON FABRICS

By JOHN HOYE
Fabric Technician with W. Harris Thurston, New York

This fifty-ninth installment of Mr. Hoye's series of articles—which began in the January, 1936 issue—continues the discussion of filled and coated fabrics



Group B vellum, embossed with schreiner roll; lower part shows base cloth, 38½ in., 64x60, 5.35 yd. print cloth

## BOOKCLOTHS

The base fabrics used to make bookcloths range from 1.7 to 7.9 oz. per sq. yd. (bleached and unsized), and are standard among those manufacturers who supply the trade. They are divided into groups A, B, C, C-1, D, E, and F, and are covered by U. S. Dept. of Commerce Standard CS57-40.

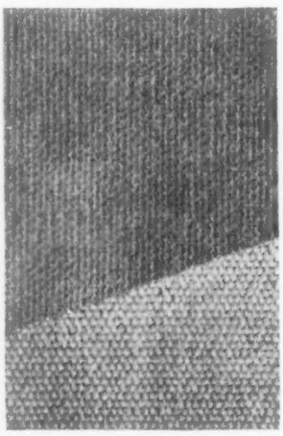
Usually, in preparation, base cloths are bleached to a pure white and, except those to be given a linen finish, are piece dyed. Starch-filled bookcloths are filled, after dyeing, with a thick colored paste, or starch and clay mixture. The paste fills the spaces between the warp and filling yarns and is forced into the cloth by heavy rollers. It is necessary to give the cloth two or more (in some cases up to seven) fillings and coatings to obtain the finish required. Care must be taken that the color of the filling substance matches that of the piece-dyed goods.

Pyroxylin treated bookcloths have washable or waterproof finishes which do not chip, peel, or blister. They usually are treated with colored filling materials, with pyroxylin on one side only. Lustrous finishes are obtainable by running the filled cloth several times between heated calendar rolls which run at different speeds. Engraved steel rolls which are heated and under pressure are used to produce embossed designs. The difference between starch-filled and pyroxylin-coated cloths often can be detected by rubbing samples with a damp white cloth; if the color rubs off, it usually indicates a starch-filled finish.

In making linen-like finishes, the base cloth is white and colored filling substances are applied to one side only; the back of the cloth is white where the yarns are uncolored. The filled side generally is glazed, and the cloth embossed with a schreiner roller, or other design. Vellum bookcloth is piece dyed before it is filled. Both sides usually are given a glazed finish, and embossed designs are common. These two types of bookcloths are made from 38- and 40-in. fabrics; the base cloths are print cloth and sheeting ranging from 1.7 to 4.2 oz. per sq.yd. in the bleached, unfilled state.

Buckram bindings are heavy, durable, and rather stiff, and are used largely on catalogs and on library, law, and reference books. Base cloths are heavy flat ducks of 6 to 7 oz. per sq. yd. or osnaburgs of about 4.7 oz. per sq. yd. Buckrams may be starch filled or pyroxylin treated; they are given vellum, linen-like, and English finishes. Standard widths of base fabrics are 36, 38, 40, and 42 in.

"Leather" cloth, a pyroxylin treated vellum, is used for flexible- and hard-cover books, also for upholstery, table tops, etc. It is embossed to simulate leather, such as Spanish or Morocco, or is given an Ecrasé finish. It is made in 36- and 40-in widths.



Group F buckram; lower part shows base cloth, 42 in., 86x26, 8 oz. D. F. duck

Group C pyroxylin treated "leather" cloth; lower part shows base cloth, 40 in., 56x60, 3.60 yd. sheeting

Bookbinding hollands are starched and heavily filled cloths, with a smooth, firm, flat finish. Backs of the fabrics are gummed as reinforcement. Base fabrics are loosely woven cheese-cloths. Gray cloth requirements of Commercial Standard CS57-40 are given below; in parentheses are suggested constructions.

Group A—1.7 oz. sq. yd. stripped (without sizing), 92 total threads per in. (w. + f.), 38 lb. warp and 15 lb. filling minimum breaking strength, the sum of warp and filling breaking strengths to be not less than 60 lb. (38½ in., 48x48, 7.15 yd. print cloth).

Group B—2.1 oz. sq. yd. stripped, 104 total threads per in., 50x20 lb. min. breaking strengths, sum not less than 77 lb. (38½ in., 64x60, 5.35 yd. print cloth.)

Group C—3.4 oz. sq. yd. stripped, 104 total threads per in., 55x42 lb. min. breaking strengths, sum not less than 105 lb. (40 in., 56x60, 3.60 yd. sheeting.)

Group C-1—4.2 oz. sq. yd. stripped, 94 total threads per in., 64x48 lb. min. breaking strengths, sum not less than 120 lb. (40 in., 48x48, 2.85 yd. sheeting.)

Group D—4.7 oz. sq. yd. stripped, 58 total threads per in., 65x35 lb. min. breaking strengths, sum not less than 110 lb. (42 in. 36x32, 2.60 yd. clean osnaburg.)

Group E—6.0 oz. sq. yd. stripped, 106 total threads per in., 100x55 lb. min. breaking strengths, sum not less than 165 lb. (41 in., 84x26, 2.00 yd. S.F. flat duck.)

Group F—7.9 oz. sq. yd. stripped, 110 total threads per in., 120x70 lb. min. breaking strengths, sum not less than 200 lb. (42 in., 84x28, 1.45 yd. D.F. flat duck.)

A 25% tolerance is allowed on individual and total breaking strengths when cloths are embossed.

Other gray fabrics used for making filled and coated bookcloths:

38¼ in., 44x40, 8.2 yd. cheese cloth; 41 in., 72x80, 4.10 yd. print cloth.

Plain-dyed non-coated bookcloths are used to cover looseleaf books. They usually are made from Army and flat ducks, of which the following are examples:

37 in., 50x38, 7.50 oz. Army duck; 30 in., 50x38, 6.08 Army duck; 50 in., 50x38, 9.40 oz. Army duck; 46½ in., 84x28, 1.63 yd. D.F. flat duck; 46½ in., 84x26; 2.20 yd. S.F. flat duck.

The Army ducks are finer-yarn, lighter-weight ducks than the 28½-in., 8-oz. Army ducks.

# NEWS OF THE MONTH

## Wage Increases Feature Southern Labor Picture

In many parts of the South last month there were wage increases in textile mills ranging from 5 to 7%. Reason for the increase is partly because of improved business conditions and partly in anticipation of higher minimum-wage requirements. The new hourly minimum is expected by manufacturers to be raised to a point anywhere between 35 and 37½c. Labor-union leaders are pushing hard for the full 40c. minimum, but consensus is that wages will probably be raised to this level in two steps rather than one. The majority of mills announcing an increase are located in the Piedmont section of the Carolinas. There has been a definite hesitancy to date among some mills in Georgia, Alabama and other parts of the deep South to announce wage increases. Many plants in that area, it is reported, are waiting to see what the new legal requirements will be before changing. However, Bibb raised wages March 31.

In some instances the wage increases were preceded by minor labor disturbances in scattered sections of the South, including Kingsport, Tenn., Greensboro, N. C., Columbus, Ga., and Asheville, N. C. In Greenville, S. C., Woodside Cotton Mills Co. signed a contract with the CIO union after two years of negotiation, the first contract in the Greenville area. It is understood that at least one other South Carolina mill recently signed a union contract although details have not been officially announced at this writing. In several sections of the South CIO is making a hard drive to conclude contract negotiations and to increase its membership.

The union movement in Georgia received something of a set-back when bills were passed by both Houses of the Legislature, and at this writing await signature of the Governor, which would prohibit strikes without 30 days notice and would prevent exhorbitant union fees from being collected from workers on Government projects. A bill which would require labor unions to incorporate was thrown out without serious consideration. A committee appointed by the Georgia Legislature investigated union conditions on Government projects and reported that discrimination and racketeering were evident.

In South Carolina a bill passed the House of Representatives and was sent to the Senate which would permit mills of Fairfield County to operate on Sundays. The bill is similar to a proposed State-wide measure, which recently failed to pass, to permit all South Carolina textile plants to operate on Sundays if filling national defense orders.

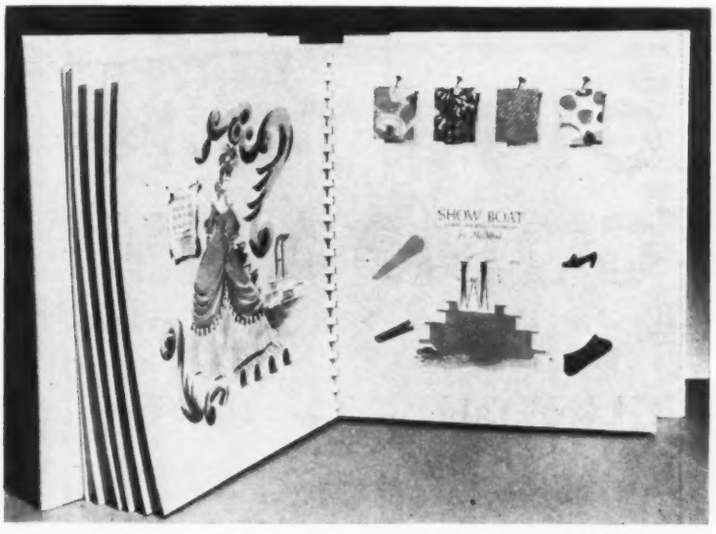
## New England Cotton Workers Get 10% Advance

Textile operatives of New Bedford, Mass., received a 10% increase in pay, effective March 24, action following a conference held between representatives of the New Bedford Cotton Manufacturers' Association and delegates of the New Bedford Textile Council. The increase affects approximately 16,000 workers and adds about $33,000 weekly to the payroll. The cotton industry increase has been accepted generally through New England, affecting a total of 80,000 workers.

As reported in these columns last month, there has been granted a 10% wage increase affecting most woolen and worsted workers, effective May 12.

## Conferences on Preparedness

The Atlanta conference on Preparedness for Today and Tomorrow, sponsored by Associated Industries of Georgia, Cotton Manufacturers Association of Georgia, and the National Association of Manufacturers drew a large and attentive audience at the Ansley Hotel, Wednesday, March 19. Of particular interest to the large number of textile executives present were the talks by Thurmond Chatham, president, Chatham Mfg. Co., Elkin, N. C., and Brigadier-General C. L. Corbin, Chief of Supply Division, Quartermaster Corps, U. S. Army. Gen. Corbin offered some valuable suggestions as to ways and means of securing Government contracts, and concluded his remarks by




NO MEND HOSIERY, INC., Philadelphia, has prepared a handsome volume, dramatizing its hosiery colors for spring and summer 1941 under the name "New American Favorites." The spread shown above presents "Show Boat." As is true with the other six spreads there are also shown accessories in wool, silk, cotton, rayon and leather which may properly be worn with the particular hosiery color shown. The other colors are Derby, Square Dance, Mardi Gras, Rodeo, Hayride and Cocktail.

CLINTON

STARCHES

FOR ALL
TEXTILE PURPOSES

QUALITY
AND
SERVICE

CLINTON
COMPANY

CLINTON — — IOWA



cautioning manufacturers to be careful about sending representatives to Washington, or making connections with professional sales agencies already there. A similar conference has been held in Charlotte, N. C., and other centers.

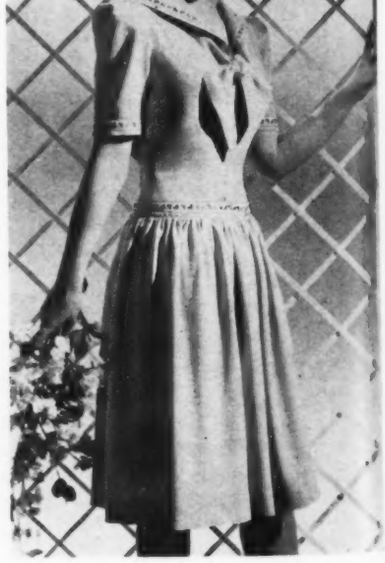
## Joint Meeting in Greenville

As a highlight of the Southern Textile Exposition, mill men and exhibitors attended a joint meeting of Alabama Textile Operating Executives, Textile Operating Executives of Georgia, and Southern Textile Association, at which the latter played host, in Poinsett Hotel, Greenville, S. C., April 4. Marshall Dilling, executive secretary of STA presided. Hugh M. Comer, executive vice-president of Avondale Mills, Sylacauga, Ala., spoke on his recent trip to South America. He said that most of the cotton processing machinery he saw was English made, about 40 years old, and that most of the cotton manufacturers were English, Scotch, or Italian. Shortage of German dyes, said Mr. Comer, is resulting in increasing use of American colors, but differences in techniques are giving finishers trouble. In Peru, he said, cotton farmers obtain yields as high as nine bales to the acre of staples developed from Pima grown in the United States.

## Not Merely Washable—but Launderable

The garment illustrated is one which the American Institute of Laundering, comprising 2,200 leading laundries, will accept for laundering as it bears the Institute's seal of approval. Fabrics woven of Eastman's crimped acetate rayon, Teca, are the only spun-rayons which bear this seal. Teca blends are guaranteed against shrinkage, stretching, and sagging by the American Institute of Laundering, and are identified with a woven label sewn into each garment.

The arrangement whereby approved fabrics and garments made from Teca will carry the American Institute of Laundering label was described at a recent press conference held in the fabric studio of A. M. Tenney Associates, New York, sales representatives of Tennessee Eastman Corp.



Dress made from Marvlo Mills fabric, 50% Teca and 50% viscose rayon. It is not merely washable but commercially launderable.

Member of the 501st Parachute Battalion now training at Fort Benning, Ga., wearing jump suit of Tackle Twill.

## "Tackle-Twill" for Parachutists

The U. S. Army's parachute troops are being equipped with special uniforms made of a heavy, snag-proof rayon and cotton fabric which is manufactured by William Skinner & Sons, Holyoke, Mass. The fabric is "Tackle Twill" woven of Tenasco high-tenacity rayon yarn of American Viscose Corp., and cotton yarn. It is similar to the fabric used for football uniforms. It is treated with a Cravenette finish for water repellency, and is vat-dyed with a fast olive drab. The smoothness of the fabric reduces hazards of fouling parachute lines.

## Cotton Congress in Memphis Oct. 6 to 10

The dates for the Pan American Cotton Congress have been set for Oct. 6 to 10 at Memphis, Tenn. As previously noted in these columns, several textile men are on the advisory committee. Congress has passed a bill authorizing the President to call this Congress and to invite the nations of the Western Hemisphere to participate. It is hoped that the Cotton Congress will develop a hemispheric program of advertising and sales promotion designed to create a sustained consumer demand for cotton and cotton products.

## American Woolen Optimistic

One of the shortest and most harmonious annual meetings in the history of the American Woolen Co. was held in Springfield, Mass., on March 25. No questions came before the meeting and adjournment was taken after 25 minutes work. Moses Pendleton, president, in referring to the company's dividend policy, said "There are reasons to believe that earnings for 1941 will equal those for 1940, and, if so, we should pay out in dividends as much as we did last


New!

PARALON*

A HARTEX PRODUCT

A Completely Substantive SOFTENER FOR COTTON AND RAYON FIBERS

● PARALON is substantive to all cellulosic fibers. It differs from ordinary finishing agents in that it exhausts completely onto the fiber regardless of the dilution of the treating bath. It is economical to use because there is no waste. Every ounce of PARALON added to the bath is taken up by the yarn.

PARALON is particularly adaptable in the finishing of sewing threads, knitting yarns and cotton raw stock.

***Note These Outstanding Advantages:***

- PARALON imparts a high degree of softness and excellent knitting qualities to cotton and rayon yarn.
- PARALON improves the carding and spinning qualities of dyed raw stock.
- PARALON makes possible finishes which were heretofore considered either impossible or impractical to obtain in dye kettles or dye machines.
- PARALON eliminates use of special finishing equipment for wax application or softening of knitting yarns and sewing threads.
- PARALON is inexpensive, for it exhausts completely onto the fiber.

* PARALON (patent applied for) is offered in three grades to meet specific requirements:

PARALON W— paraffin wax base

PARALON M — white mineral oil base

PARALON C — carnauba wax base

Consult us about your particular finishing problems. Our laboratory and technical facilities are at your service. An inquiry entails no obligation.

"Always Ready to Render Service"

THE HART PRODUCTS CORP.

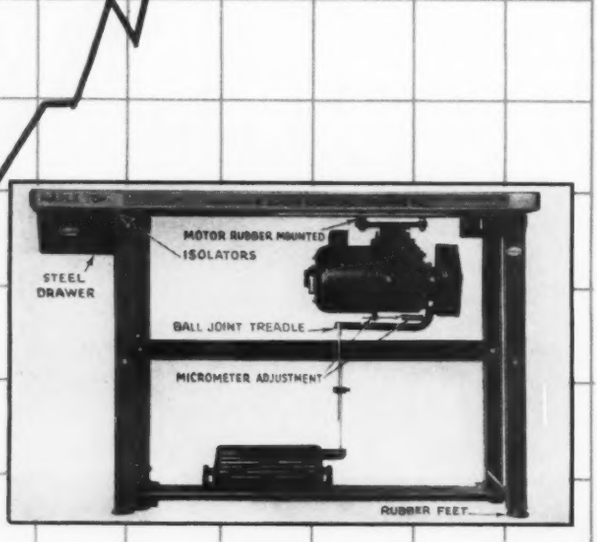
MANUFACTURING CHEMISTS

1440 BROADWAY • NEW YORK, N. Y.

INCREASE PRODUCTION

The instantaneous starting and stopping, high speed and trouble-free performance of the American Electric Clutch makes possible our guarantee — 10% production increase with this sewing machine drive.

This claim is based on records compiled in hundreds of plants. We invite you to challenge it at our expense...install an American Electric Clutch on trial...check its production and watch its smooth performance. Send for details today!




American Individual Drive Unit

See our exhibit at the Show or write for further details.

AMERICAN SAFETY TABLES

American Safety Table Co., Inc.
Eighth and Oley Streets, Reading, Pa.



year and possibly more, if our earnings and general conditions warrant so." Mr. Pendleton said that total salaries paid in 1940 were 30% less than those paid in 1936 when Mr. Pendleton became president of the corporation, and 70% less than those paid in 1929.

## More Nylon Uses

Nylon has been introduced by a Baltimore manufacturer into the umbrella field. First shipments of such merchandise were made at the end of March. It is understood that the retail price will be around $3.95, but only a limited number are available at the present time. Experimentation with Nylon for use in construction of collars and cuffs of men's shirts is reported, and it is believed that the strength and resistance to abrasion of this fiber may make this use ultimately an important one. Use in athletic uniforms is an additional new application. Nylon basketball jerseys have been tried out by Northwestern University this season and are reported to have been highly successful. It is also reported that the Chicago National League baseball team is to be outfitted with uniforms made largely of Nylon but wool slacks.

## Seek Funds to Promote Silk

Because of the failure of the International Silk Guild to receive funds from Japan for promotion of silk, that organization is confining its work for the time being to operations of an educational nature. However, plans for raising funds in the United States are under consideration and it has been suggested that funds be collected by a levy on raw silk imports. Such a levy has been collected in Japan and the fund, which is estimated now at more than $500,000, is being held in Japan as a result of the refusal of the Japanese Government to permit its transfer to this country.

## And Now the Pacific "Facbooks"

Pacific Mills has extended its Factag program to its lines of sheets and pillow cases. The label in this case takes the form of a 4-page folder, called the Pacific "Facbook," which is attached to each sheet and pillow case. The front page of the Facbook is the distinctive label of the line identified. The two inside pages are devoted to an explicit presentation of the physical characteristics of the sheet, with a certification that the sheets have been tested according to methods prescribed in U. S. Government General Specifications CCC-T-191a. The fourth page carries size charts for sheets and pillow cases.

Pacific Mills "Facbook" attached to sheet

**TEXTILE MILL SIDELIGHTS—No. 23**

**"Could you match this sample? I've tried almost everywhere!"**

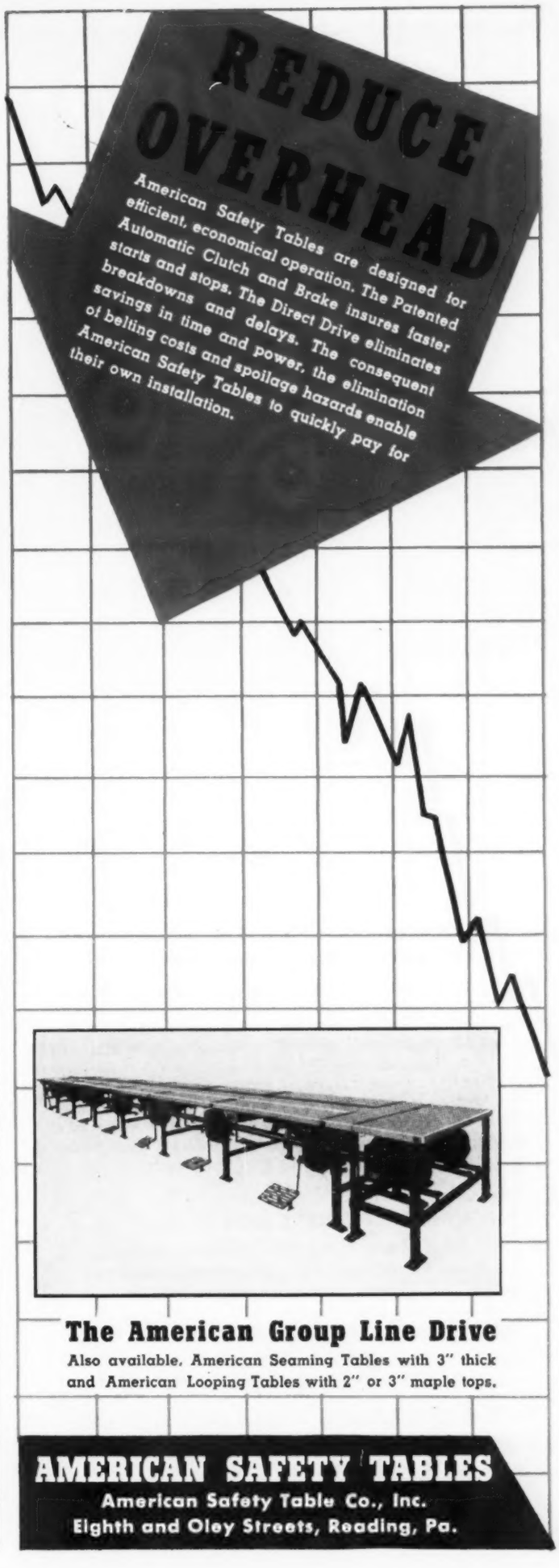
## Cotton Consumption Statistics Broken Down

A new statistical service has been started by the Bureau of the Census whereby the monthly figures on domestic consumption of cotton are to be broken down showing that consumption by classes of manufactured products in which the cotton is used. The first report of this nature covers the period from July 1 to Dec. 31, 1940. When the schedule gets moving according to plan, each monthly report will be issued on the 21st of the month following the month covered—that is, one week later than the general cotton consumption report which appears on the 14th.

The initial report for the last six months of last year shows the following percentages of consumption among the different classifications: Sales yarn, 20.5%; duck, 5.5%; tire fabrics and cords, 7.4%; narrow sheetings and allied fabrics, 13.5%; wide fabrics, 8.4%; print cloth yarn fabrics, 10.7%; fine goods, 5.6%; napped fabrics, 4.5%; colored yarn fabrics, 7.0%; towels, 2.2%; other woven fabrics and specialties, 4.0%; all other cotton products, 10.7%. These percentages apply to a total of 4,207,457 bales for the six-month period, of which 3,605,619 bales were consumed in the cotton growing States, 486,509 bales in the New England States, and 115,329 bales in other States.

## Earnings of Group of Cotton Mills Averaged 6.5% in 1939

The combined net income, before deduction of interest on long-term borrowings and income taxes, on 34 cotton-textile manufacturing companies in 1939 was at the average rate of return of 6.5%, according to the Federal Trade Commission. This is one of a series of similar studies being undertaken by the Commission in the principal industries of the country. This average rate of 6.5% for the combined group represented individual rates ranging from a loss of 6.1% to a profit of 18.5%. Twelve of the 34 corporations had rates of return higher than the average, and their rates ranged from a profit of 6.8% to 18.5%. Of the other 22 corporations, 15



REDUCE OVERHEAD
American Safety Tables are designed for efficient, economical operation. The Patented Automatic Clutch and Brake insures faster starts and stops. The Direct Drive eliminates breakdowns and delays. The consequent savings in time and power, the elimination of belting costs and spoilage hazards enable American Safety Tables to quickly pay for their own installation.
The American Group Line Drive
Also available, American Seaming Tables with 3" thick and American Looping Tables with 2" or 3" maple tops.
AMERICAN SAFETY TABLES
American Safety Table Co., Inc.
Eighth and Oley Streets, Reading, Pa.

Saves $8,000
...gets more fluorescent light!
... with IVANHOE "50 FOOT CANDLER" RLM Continuous Wireway FLUORESCENT LIGHTING SYSTEM

## Well-known manufacturer* receives this profitable *double-benefit!*

Specifications for bids on 2,000 individual fluorescent units had already been issued. Then engineers on this important new plant* discovered their lighting job could be handled more efficiently and economically with IVANHOE "50 FOOT CANDLERS". Very next day entire electrical work was done over—new estimates made up. These called for a minimum of 30 foot candles *maintained*—5 *foot candles more* than originally planned. They got this greater illumination and along with it a *net saving of $8,000!*

***Find out what Ivanhoe Fluorescent "50 Foot Candler" can do for YOU***

IVANHOE "50 FOOT CANDLER" has given many textile mills substantial installation savings along with higher illumination. It has paid them profits, too . . . in the form of increased production efficiency, fewer rejects and less spoilage. It can do this for *you*, too—because it is *not* a lighting fixture but a *lighting system*, engineered to *your* mill and *your* problems. It is the first RLM *Continuous Wireway* Fluorescent Lighting *System* providing new higher levels of illumination at economical cost. Write for full details in "50 FOOT CANDLER" Bulletin 1C.

**Name and full details on request.*

***IVANHOE "50 FOOT CANDLER" offers . . .***

*Higher Illumination...30 to 50% Lower Installation Costs ...Easier, Faster Installation...Uniform Light Distribution . . . Clean-cut, Modern Appearance . . . Simplified Maintenance...Allowance for Future Lighting Needs.*

**THE IVANHOE MARK OF A COMPLETE LIGHTING SERVICE**

**THE MILLER COMPANY**
**MERIDEN, CONN.**
*Pioneers in Good Lighting Since 1844*




### TEXTILE CALENDAR

Alabama Cotton Manufacturers Association, annual meeting, Admiral Semmes Hotel, Mobile, Ala., Apr. 17 and 18, 1941.

Knitting Arts Exhibition, 37th annual show, Commercial Museum, Philadelphia, April 21 to 24, 1941.

National Ass'n of Hosiery Mfrs., annual meeting, Commercial Museum, Philadelphia, April 23, 1941.

Underwear Institute, annual meeting, Commercial Museum, Philadelphia, April 24, 1941.

Greater New York Safety Council, 12th annual safety convention and exposition, Hotel Pennsylvania, New York, April 22 to 25, 1941.

American Cotton Manufacturers Association, annual convention, Bon Air-Vanderbilt Hotel, Augusta, Ga., April 24 to 26, 1941.

Textile School of North Carolina State College, style show, Raleigh, N. C., April 24, 1941.

Phi Psi Fraternity, 38th annual convention and exhibit, Providence-Biltmore Hotel, Providence, R. I., May 16 and 17, 1941.

National Cotton Week, May 16 to 24, 1941.

Cotton Manufacturers Association of Georgia, annual meeting, Cloister Hotel, Sea Island, Ga., May 29 to 31, 1941.

Philadelphia Textile School Alumni Association, annual outing, Manufacturers Country Club, Oreland, Pa., June 6, 1941.

Southern Textile Association, annual meeting, Ocean Forest Hotel, Myrtle Beach, S. C., June 13 and 14, 1941.

American Association of Textile Chemists & Colorists, annual meeting and convention, Carolina Hotel, Pinehurst, N. C., Oct. 31, and Nov. 1, 1941.

of them had rates of return lower than the average, their range being from a profit of 0.7% to 6.2%. Of the remaining seven corporations, one broke even, while six had losses ranging from 0.2% to 6.1% of the average total investment.

The net income on the corporate net worth investment, or stockholders' equity, averages 5.1%, the range for the individual corporations being from a loss of 6.1% to a profit of 17.5%.

The group selected represented something about 35% of the industry as a whole, so far as gross sales are concerned.

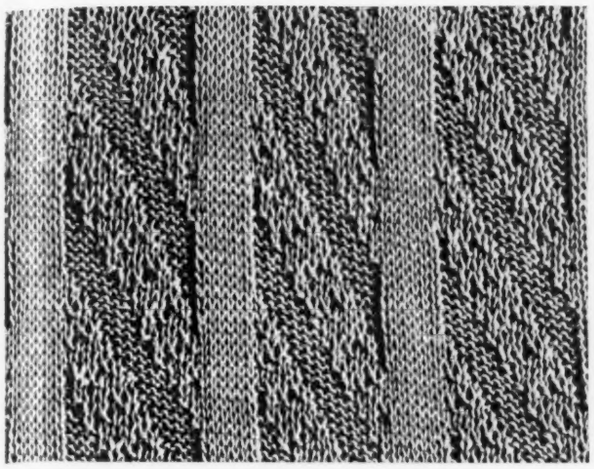
## Gotham Launches New Brand

Hosiery under the name "Tabarin" will be introduced to the women of America this month. Gotham Silk Hosiery Co. is the manufacturer, and the line will be sold only under franchise with exclusive retailers in specified cities. The line includes ingrain and dipped silk stockings and Nylon as well, to retail from $1 to $1.95. The stockings are carefully packed and are promoted in the French manner, the current color line being identified with French girls' names. Saks Fifth Avenue is at present the only retailer handling this line, and a 10-year contract has been entered into between Saks and Gotham.

## Institute Opposes Certificate Plan

Opposing current proposals for revision of the cotton control program which would artificially raise the price of cotton to mills and consumers, the Cotton-Textile Institute has urged retention for at least another crop year of the present system of control and benefit payments. In a pamphlet entitled "The Future of Cotton in America," which was sent to members of Congress, the Institute held that "if and when additional payments are contemplated the welfare of cotton is best served by providing for them from the general treasury," rather than obtaining them through a marketing certificate plan, a processing tax, or a loan rate.

"This is the only sound position," the Institute declares, "that can be taken if we are to protect not only domestic cotton consumption but also the American consumer." . . . . . Under the proposed plans for artificially increasing the price



Links-and-links novelty rib fabric for campus socks styled by Bureau of Home Economics, U. S. Dept. of Agriculture. Yarn is 90s/3, combed, gassed, mercerized. Sixty dozen pairs in six patterns and ten colors have been distributed to three girls' colleges for wear tests.

of cotton, the American consumer would be asked to pay approximately $500,000,000 a year more for cotton goods.

Because the business of agriculture doesn't boom like other lines in the defense drive, farm Congressmen are trying for legislation to subsidize the "five crops" up to equality with labor and industry. Before the Senate at this writing was a bill by Senator Bankhead of Alabama to increase the income of producers of wheat, rice, cotton, corn and tobacco. This would be done by providing loans for an amount equal to the parity price of each commodity less the amount received by each borrower as conservation payments, and by further reducing the present market quotas. A similar bill is before the House. Enactment seems probable in some form.

## Bemberg Renews Cooperative Advertising

American Bemberg Corp. has sent to mills weaving Bemberg rayon triple sheers a letter telling of the renewal of its former policy of cooperative advertising. Details of the plan have been worked out in accordance with the provisions of the Robinson-Patman Act. The company plans promotion on a similar basis of cooperation on other basic fabrics made of its yarn.

The following is quoted from the letter: "We will contribute for promotion up to 1c per lb. of Bemberg rayon purchased by you subsequent to May 31, 1940, for use in the above described fabric. This contribution is made available by us, provided you or your customers will contribute an equal amount of money to be used to pay the cost of the promotion on a 50/50 basis. Under the plan and the provisions of law, money allocated to your customers must be offered pro-rata based on the poundage of yarn required to weave the yardage of fabric purchased from you by each individual customer. In no case can the total amount spent with any one of your customers exceed his pro-rated share of our appropriation.

"This appropriation is only for direct customers of our company, but may be allocated by them to their customers and customers' customers proportionately as above set forth, subject to existing trade regulations."

## Cotton Industry War Exhibition

A Cotton Industry War Exhibition was held recently in Oldham, England, under the auspices of the Cotton Board. Explaining the exhibition, E. Raymond Streat, chairman of the Board, stated that "We thought we would like to show


Hydrogen peroxide $H_2O_2$

HELPS IN CLOTHING UNCLE SAM'S NEW ARMY

Thousands of pounds of wool and cotton have been and are being processed for the uniforms to clothe our expanding armed forces. Penn Salt 100 volume hydrogen peroxide is efficiently doing its duty in many leading woolen mills, cotton mills, and wool scouring plants.

This hydrogen peroxide is a pure and particularly stable material. Its uniform oxidizing action aids in assuring excellent bleaching results.

You can obtain this hydrogen peroxide in 120 lb. carboys and 250 lb. drums from stocks conveniently located. Be sure to take advantage of Pennsylvania Salt's technical service . . . whenever you have a problem involving hydrogen peroxide or any other of our products. Pennsylvania Salt Manufacturing Co., Widener Building, Philadelphia, Pa.—New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma.

Other Pennsylvania Salt Chemical Products used in the Textile Industry

| | |
|---|---|
| Caustic Soda | Sodium Hypochlorite |
| Soda Ash | Carbon Bisulphide |
| Sulphuric Acid | Ammonium Persulphate |
| Hydrochloric Acid | Anhydrous and Aqua Ammonia |
| Chlorine | Bleaching Powder |

PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals

*For economical starch removal*

**At nominal cost, EXSIZE removes starches quickly and thoroughly . . . thereby conditioning fabrics perfectly for bleaching, dyeing and sanforizing.**

**Do you have a copy of "Notes on Exsize" for your files? Send to our Chicago office—it's FREE!**

**PABST SALES COMPANY**

**CHICAGO, ILLINOIS**

Warehouses at New York, and Textile Warehouse Co. Greenville, S. C.

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our own folks, bosses, mill workers, and business men how big a part the cotton industry plays in Britain's war effort. We were out to prove that the Lancashire mill girl who makes cottons for export or for war purposes is a front line fighter, and that first class equipment and a steady flow of it can be as vital to success in battle as the courage of our men."

"I wish you could see some of our exhibits," said Mr. Streat, "a gorgeous West African print designed for some Gold Coast chief, or one of the lovely printed cambrics which we ship to Java and which, so my fashion expert tells me, would delight the hearts of Fifth Avenue. Even more typical is a full-sized barrage balloon, a wind-proof flying suit, or one of the special shelters designed to keep the Libyan sand out of our armored cars and lorries—all made of cotton."

Mr. Streat is well known in this country, particularly because of the fact that he was one of a mission of two sent here by the Manchester Chamber of Commerce in 1939—his associate being Col. W. A. Grierson.

## Finishers Ask Trade Rules

Strong recommendations for immediate adoption by the Federal Trade Commission of trade practice rules to "stabilize" the rayon and silk fabric dyeing and finishing industry were made by J. W. Knapik, president, Federation of Dyers, Finishers, Printers, and Bleachers of America, at an FTC hearing in Washington, March 28. A brief filed by proponents of the rules pointed out that, in spite of a 1937 sales figure of over $57,000,000, only net losses had resulted. The brief charged that intensive and unfair competition within the industry had resulted in use of inferior and adulterated materials, and in delivery of products not in conformity with samples submitted by customers and representations made by members of the industry.

## Lamport House-Warming a Gathering of the Clans

The Lamport Co. held an impressive house-warming at its new building, 365 Broadway, New York, on March 18. The event drew large numbers of executives from the Worth Street district as well as from the jobbing and retail trade. Samuel C. Lamport, head of the company and host at the house warming evidenced his international-mindedness with an "international bar" with 26 different kinds of liquor on the wine list, each one representing the distinctive drink of a different country. The occasion marked the 50th anniversary of the founding of the company in 1891 in Burlington, Vt., by Nathan Lamport.

## Textile Markets Well Sustained

**Cotton goods** closed the month of March with a turn toward quieter trading after sharp advances. The well-sold position in nearly all lines will assure stability for some weeks. There remained a premium on spot goods as demand exceeds supply on numerous items. For 38½ in. 64x60s spot price was 7¼¢ with contracts at 7⅛¢. In heavy goods there has been some feeling out of deliveries for August and later. The raw cotton market remains strong.

**Wool goods** market interest has centered about Government contracts and the Wool Labeling Law. Anticipating higher prices arising from the wage increase which is to be effective May 12, buyers have been taking steps to cover ahead. A number of fabrics have been advanced 5 cents a yard. Miscellaneous inquiry for fancy women's wear against spring season was turned into jobbing channels. Workers in the clothing field have gained a wage increase from 10 to 13% effective May 19. This

means advances of $2.50 to $5 in retail price of suits beginning with the Fall season. On the labeling matter there is much pessimistic thought to the effect that meetings, hearings and arguments are of little effect, and that the F. T. C. rules as issued are likely to be put into effect.

**Rayon yarns** continue well sold to the extent of full normal production. There is a slight tendency for stocks of yarn in weavers' hands to run higher than last year, but in no sense is this burdensome. These supplies average four to five weeks consumption. A rise in viscose yarn prices is expected, beginning with the June bookings. In the fabric field filament-yarn sheers were active and scarce.

**Silk** continued to be well sustained through March and the month closed with a 78% crack XX selling at $2.87½ for nearby. Silk imports have been running over 30% less per month than the monthly average in 1940.

**Hosiery** manufacturers have been turning their attention to better merchandising and March saw the launching of numerous new lines. The success of crepe-de-chine hosiery seems assured and the number of mills making it has increased radically since the lines were first put on the market. Advances on full fashioned hosiery were reported early in April amounting to 15 to 25c per dozen.

**Underwear** mills continue generally busy on Government business. Early buying has resulted in civilian business for fall on a large scale. Mills have withdrawn some lines.

**Outerwear** plans for fall are maturing earlier than usual. Retailers are willing to anticipate their fall requirements earlier since all are conscious of the likelihood of higher prices later on. Cotton sweat-shirt lines are reported sold up for fall and practically off the market.

## This and That

**National Cotton Week** (May 16–24) promotion is well under way and biggest results ever are expected.

**Triumph Hosiery Mills** are the manufacturers of a mesh stocking made of a combination of silk and Lastex yarns which clings snugly to the leg. These stockings are being sold by B. Altman & Co., New York, at $1.65 per pair.

**Federated Textiles, Inc.,** New York, is offering a new fabric called Vitura, woven from North American Rayon Corp.'s Nardura, a high tenacity viscose-process rayon yarn.

**"Whisper Woolens"** were launched last month in Miami by June Hamilton Rhodes. From a wedding gown to casual town wear, sheer wool fabrics were shown.

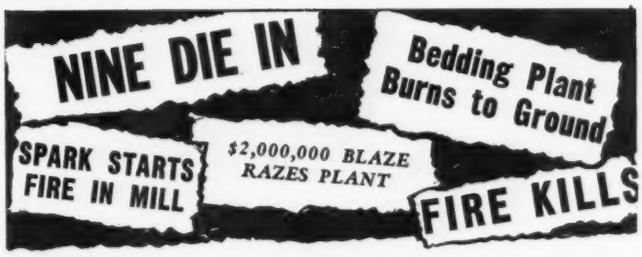
**Meredith** (N. H.) **Linen Mills** is encouraging the raising of flax by nearby farmers, since domestic grown flax in other areas has proved too coarse for use at this plant.

**Domestic mohair** production in 1940 totalled 21,046,000 lb. compared with 18,709,000 lb. in 1939. The clip brought cash income in 1940 amounting to $10,459,000, compared with $8,846,000 in 1939. The State of Texas contributed about 90% of the total.

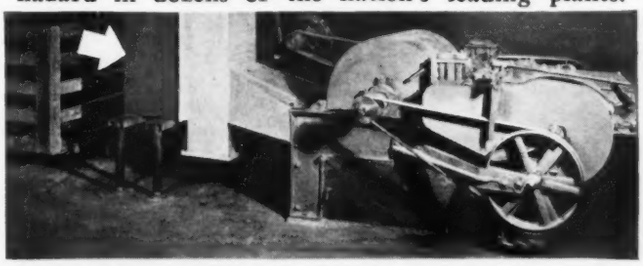
**Mayar Silk Mills, Ltd.,** Shanghai, China, with plants also in two other Chinese cities, has issued an interesting booklet commemorating its 20th anniversary in business. The plant uses considerable American machinery including Atwood winding, doubling and twisting machines, and Crompton & Knowles box looms.

**At a meeting** of the Philadelphia section of the American Association of Textile Chemists & Colorists, held March 14, P. H. Stott, of E. I. du Pont de Nemours Co. described methods of applying acid and acetate dyes to Nylon. At the meeting of the New York section, held March 28, Dr. W. E. Gordon of E. I. du Pont de Nemours & Co. discussed "Fire-Retardant Chemicals for Textiles."

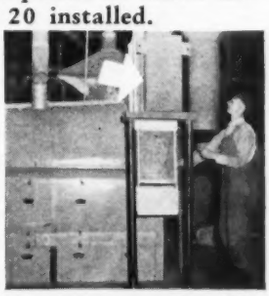
**Arlington Fabrics** made of naphthalated wool are the subject of an interesting 12-page booklet prepared by the Textile Education Bureau, New York. Illustrated are

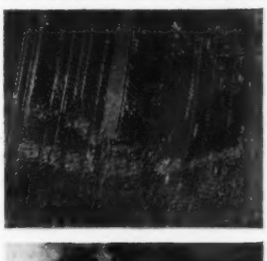

• **HEADLINES** that spell death and disaster caused by sparks from iron are all too frequent in quilt, felt, padding and bedding plants. And in many others, fires in opening and picking rooms are a menace to life and property. Now, a new prevention device is available that is reducing the fire hazard in dozens of the nation's leading plants.



• **PREVENTION** of fires caused by sparks from tramp iron is possible for the first time with Dings *High Intensity* Electro-Magnets like the one above installed in the tube from the picker at Allen Industries, Detroit. It's one of 20 installed.



• **MAGNET** for iron-removal and fire prevention at Superior Felt & Bedding Co., Chicago. Powerful enough to pull 6 inch bolts up through 4 inches of wet concrete, this magnet allows small chance for iron to get by! It's a real guardian against fire!



• **DAMAGE** to garnett rolls by iron is also prevented by the Dings Textile Magnet! Do the teeth on this roll look familiar to you? The cost of shutdowns and repairing two or three rolls like this will pay for a Dings Textile Magnet!

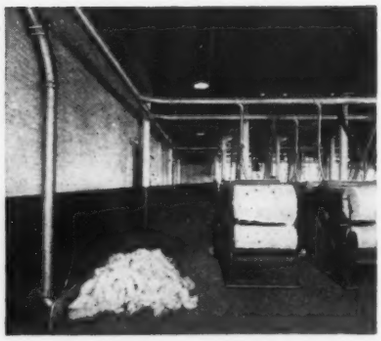
• **PROTECTION** against fire and garnett damage visually illustrated here! View shows face of magnet at A. Brandwein, Chicago. Look at the iron! Think of the fire-causing sparks in this iron "dynamite" — and the expense of damaged machinery!

• **FACTS** about the new Dings Textile Magnet are contained in this bulletin—shows diagrams, specifications, operating principles, names of users. Send for it *today*—you'll feel safer when you know your plant is safe from iron "dynamite."

**DINGS MAGNETIC SEPARATOR COMPANY**
706 Smith Street, Milwaukee, Wisc.

*World's Largest Exclusive Builder of Magnetic Equipment*

*Card strippings and process waste here travel 1,000 feet to Waste House. View at right shows card stripping and Waste Station for collecting flat strips.*

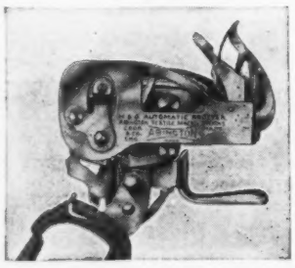


**Waste House may be near or distant**

# Vacuum Card Stripping and Waste Collecting

Stripping cards by vacuum reduces down time about 75%, adding around 4% production on cotton; and often giving an increase equal to an extra set of woolen cards. In addition, the Abington Vacuum System is used to great advantage for collecting process waste, delivering waste and strippings to a convenient central location, near or distant. Used in some 500 mills, the system is showing

**SAVINGS OF 60% TO 90% ON BOTH COTTON AND WOOL**



**For tieing weaver's knots in cotton, wool, rayon.**

With no other method can you obtain knots so uniform, compact, and short-tailed (tails automatically clipped perfectly even). The Abington Weaver's Knotter makes knots so small as to be acceptable in place of adhesive splice. Absolutely NON-SLIP. Can be adjusted to produce the long tails required for woolen and worsted.

**Stripper or Knotter Catalog sent promptly upon request**

**ABINGTON**

**ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.**

Card Strippers — Yarn Dyeing Systems — Weaver's Knotters

OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.




various types of garments mode from Arlington worsted fabrics with informative material about them. Ilustrated also are labels in general use upon Arlington products which are of particular interest because of the wool labeling law.

**Bigelow Sanford Carpet Co.,** New York, has announced a price advance of approximately 5% effective April 14.

**Reynolds Metals Co.,** Richmond, Va., is preparing to produce and market a new building insulation material which will contain flameproof, fire-resistant cotton.

**"Swim for Health Week",** the promotional effort for the bathing suit field, is scheduled for the week beginning June 23, 1941.

**Chatham Mfg. Co.,** Elkin, N. C., has had all of its operatives fingerprinted in a precautionary move in connection with national defense.

**Semi-stiff collars** produced by use of thermoplastic yarns in interlinings are the subject of a patent assigned to E. I. du Pont de Nemours & Co. Among other uses cited in the patent for thermoplastic yarns which soften at temperatures between 250 and 350° F. are in making shirt neckbands, cuffs, bosoms, box toes for shoes, and laminated fabrics.

**The Dixie Aces,** Lupton City, Tenn., successfully defended their Class A Southern Textile Basketball Championship at Greenville, S. C., by defeating the Southern Bleachery Red Flames, Taylors, S. C., 38 to 33. Pacific Mills, Columbia, clinched the A boy's championship by defeating Tennessee Eastman, Kingsport, Tenn., and Chatham, Elkin, N. C., overran American Enka, Enka, N. C., to win the A girls' championship.

**Cotton** may find a new "war use" in air-raid shelters, according to E. C. Wallace, New York engineer, who has conducted numerous tests on cotton for this purpose. According to Mr. Wallace, a seven-foot thickness of cotton will successfully resist a 6,000-lb. bomb dropped from a height of 30,000 ft. On the other hand, a 2,000-lb. bomb, dropped from a height of 15,000 ft., will penetrate 6 ft. of concrete. The cotton can be fire-proofed, he adds.

## Greenville Textile Show

(*Continued from page 82*)

in pigment printing, and synthetic resins and other finishing compounds. New warp-sizing agents included a slow-congealing starch product which cooks in 20 to 30 min., allows fat content of formula to be reduced, and desizes quickly; a vegetable gum recommended specifically for sizing corduroy warps; a starch derivative for sizing continuous-filament rayon; a cold-water-swelling starch product for giving tough, flexible films when substituted in part for ordinary starch; and a water-soluble resin binder for use in conjunction with starch, gums or softeners to give increased strength and toughness to the film.

Of outstanding interest to textile printers were two new binders or thickeners for use in pigment printing. With both of these products, preparation of the printing paste is said to be simple and to require no special apparatus. New among wetting agents was one having an exceptionally high wetting-out speed and good softening properties, but no detergent action. Synthetic resins featured at the show included a low-cost finish for cotton, spun-rayon and cotton-rayon fabrics; and one for imparting permanent crease-resistant finishes to a wide range of materials. Among other new chemicals were a domestic substitute for Japan wax; a series of starch gums for finishing various constructions of cotton fabrics; and a detergent specially compounded for use in processing silk and wool.

# Reputations like these are based on uniform high quality

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NORTH AMERICAN RAYON — THE KEY TO QUALITY

KAYSER

Van Raalte

## That's why they keep process water uniformly soft and clear ...the PERMUTIT* way

TYPICAL PERMUTIT TEXTILE INSTALLATION

Uniform quality in finished fabrics demands uniform process water. A slight change in the quality of raw water may completely spoil the "feel". . . result in harsh, lusterless fabrics . . . spotty, off-color dye-lots.

That's why so many important textile mills—1500 of them—depend on Permutit Water Conditioning equipment for a uniform supply of soft, iron-free process water.

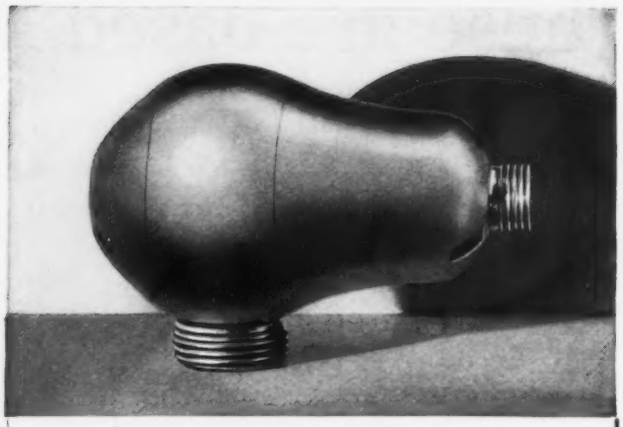
**CUTS COSTS, TOO**—There's economy in maintaining quality, eliminating spoiled lots. And Permutit makes big savings in other ways, too . . . on detergents and dyes; in boiler repairs and fuel costs, due to elimination of boiler scale.

Write today for free booklets to The Permutit Company, Dept. B, 330 West 42nd St., New York, N. Y.

*Trade Mark Reg. U. S. Pat. Off.

**PERMUTIT**

WATER CONDITIONING HEADQUARTERS



So... You Too

Are Thinking About Atomizer Humidifiers

If prone to kidney trouble—or early change of life—any atomizer is apt to be temperamental.

Consider what atomizers are bought for—months, yes years of reliable performance. Continuously reliable. No falling off in capacity. No premature senility.

Consider the quality of moisture—spray so fine it is absorbed by room air before anyone thinks about it as spray.

Consider simplicity. Consider day by day—and long range efficiency in the use of compressed air. Consider atomizers that demand no coddling, no fussing over, no adjusting—atomizers so reliable, they are just taken for granted.

Parks Turbomatic Atomizer Humidifier

Self-cleaning Non-adjustable

Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

# Viscose Sale Aids Britain

## Transfer of ownership of leading rayon producer a war measure

**SALE OF AMERICAN VISCOSE CORP.** by its parent firm, Courtaulds, Ltd., of England, to American interests was noted briefly in these columns last month. The sale was negotiated through the British Treasury, and was of course primarily to bolster British cash resources on this side of the Atlantic, a vital part of British defense plans. It is assumed in British rayon circles that the two companies will continue their close technical collaboration as in the past.

What the Courtaulds interests will do with the funds received from the sale is a matter of speculation. One possibility that has been mentioned in financial circles is merger with British Celanese, Ltd. However, that firm, which has holdings in American Celanese, and Imperial Chemicals Investment Ltd. which has holdings in Du Pont, may also be called upon to sell their American holdings.

The management of American Viscose Corp. will doubtless remain unchanged. It has for some years been under American executives—William C. Appleton, president, being a New Englander, and John G. Jackson, chairman of the board, a native of Connecticut. Samuel A. Salvage, founder of the company and retired chairman, is an Englishman who, however, has made himself an integral part of the American rayon industry. H. C. Neren, now vice-president and general manager, came from Courtaulds' in England to the Roanoke plant in 1917.

Various of the rayon technicians, originally employed at the Courtaulds' Ltd. plant in England, who came over to work in the first plant of the American Viscose Corp., at Marcus Hook, Pa., are still actively associated with the company. These men rendered distinguished service when the plant started operation in 1910, and thereafter.

Their names now have high rank in the history of rayon in America. Among them are James Breakell, chief plant engineer at Roanoke; Ernest D. Copson, in charge of spinning machinery maintenance at Marcus Hook; H. Crewdson, chief operating engineer at Marcus Hook; and James Oakes, pipe fitter at Marcus Hook.

These men today hold a place of honor in the personnel of the American Viscose Corp. The problems they faced, in helping to operate the first rayon factory in America, were numerous and complicated. Today, as in 1910 and 1911, they are busy at their allotted tasks, continuing to give the company the benefits of their comprehensive experience.

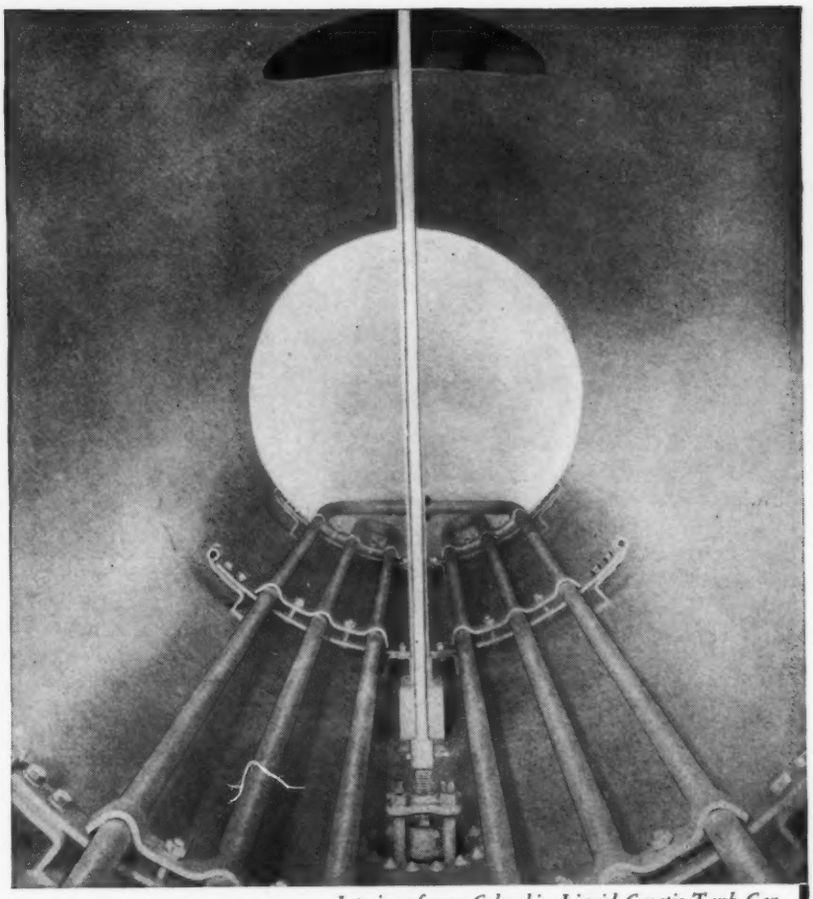
Mr. Salvage originally was the sales representative of Samuel Courtauld & Co., Ltd., British rayon manufacturers, in this country. That company purchased American rights to certain viscose patents from the son of Silas Pettit who had operated without much commercial success from 1904 to 1909. The Marcus Hook plant was started in 1910.

The banking group which has taken over the largest rayon company in this country is headed by Morgan, Stanley & Co., Inc., and Dillon, Read & Co. As reported last month the British government received $40,000,000 cash for the 95% interest in American Viscose and will later receive additional payments out of proceeds realized by sale of shares to the public. The public offering is expected soon.

---

**TEXTILE FABRICS ASSOCIATION,** the converters' group, held its annual dinner April 8 in New York. Speakers from OPM and the Defense Council included Donald M. Nelson, Miss Harriet Elliott and Leon Henderson. Emphasis on the necessity of keeping prices down was important in all of the speeches.

# $10,000 PACKAGE FOR A PRODUCT COSTING LESS THAN 2¢ A POUND



*Interior of new Columbia Liquid Caustic Tank Car*

LIQUID Caustic Soda—even at less than 2¢ a pound—is a costly nuisance if it arrives in a solid chunk the size of a tank car. It may prove worthless if it has picked up metallic contamination en route.

For two full years, we've scored 100% at delivering Liquid Caustic in perfect condition. Because we initiated the development of the most effectively insulated car ever available for the job—and originated the first protective coating capable of keeping even 73% liquid caustic pure en route. Columbia Caustic—in Columbia cars does not pick up metallic contamination. It *stays* liquid throughout normal shipping schedules.

As you might expect, ours is the first complete fleet of the cars now widely known as the "Columbia" type. As you already know, if you now use Columbia products, we think such an expensive "package" for such a low cost material well worth developing. The care we take with their making and handling is the final plus that makes Columbia products more profitable for their users.

Write today for free booklet "What Happens in Here" describing this new Columbia car in detail.

| | |
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| *ESSENTIAL* | • SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • SILENE |
| *INDUSTRIAL* | • LIQUID CHLORINE • CALCIUM CHLORIDE • HENNIG PURIFIER |
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COLUMBIA — COLUMBIA CHEMICALS

## PITTSBURGH PLATE GLASS COMPANY

*Columbia Chemical Division*

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# PIONEERS

Logical facts promote logical conclusions. Denman pioneered fabric loom parts. Years of research and thousands of dollars have been spent in improving these loom parts to stay ahead of the ever increasing quality standards of the textile industry. Their performance records, in terms of long wear, dependability and economy are unsurpassed. Theses facts become even more convincing when leading mills throughout the world standardize on DENMAN LOOM PARTS.

For LOWEST COST PER LOOM PER YEAR Specify DENMAN

PICKERS • LUG STRAPS • HOLD UPS • ETC.

*The* Terrell Machine Co., *Inc.*

CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn.—N. E. and Canada
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn. and N. J.
Geo. Thomas & Co., Manchester, Eng.—European Agt.


# New Minimum Hosiery Wage

## Hosiery Committee Met April 7, Textile Committee April 14; 35¢ Expected

**A 36¢ MINIMUM WAGE** was unanimously recommended by the new Seamless Hosiery Industry Committee, April 8. The Committee was in session only two days, under the chairmanship of G. Allan Dash, Jr., of Philadelphia. A resolution was adopted suggesting to Wage-Hour Administrator Philip Fleming that Sept. 15, 1941, would be a desirable date on which to make his order effective. Some Wage-Hour officials are reported to have said privately that the order should be effective about the first of July. The Committee's recommendation has gone to Gen. Fleming for public hearings, and after that, study of the testimony. Hearing dates had not been set at this writing. Interested parties may appear, as usual.

Earl Constantine, president of the National Association of Hosiery Manufacturers, appeared before the Committee, presented a 38-page brief in which he opposed the 40¢ minimum at this time. The industry is operating under a 32½¢ minimum. Mr. Constantine pointed out that some 20 million pairs of socks are contracted to the Army and the Navy for delivery during the coming year, and that the Walsh-Healey law puts a minimum wage of 35¢ on this production. He said he believed that a higher Wage-Hour minimum than that would bring about a dual cost structure that would cause trouble. John J. McCoy of the American Federation of Hosiery Workers, presented a brief asking for a 40¢ minimum wage.

What happens when a minimum wage order goes on an industry has just been thoroughly studied and reported, for the first time, by the Wage-Hour Division—in the case of seamless hosiery. The 139-page document was intended for the industry committee which met April 7 to reconsider the 32½¢ seamless hosiery minimum wage.

A similar study and report, though not so elaborate, is being prepared for the textile committee (cotton, rayon, silk) which meets April 14 to consider a change in the minimum wage, which is also 32½¢. The Division is anxious to make exhaustive studies for industry committees, but in this case, time is a factor; the industry wants an early decision, as a basis for bidding on defense contracts. Economists in the Division said that the textile study entirely covers the field for the committee's purposes. The seamless hosiery report was elaborated for the general interest of industry and the Government.

Prolongation of the defense program might bring about further moves to raise the minimum wages by administrative order in 1942. The Administrator is required to increase the wage, through committee action, so long as employment will not be retarded. It is possible that the rates, in any industry, might be jumped to the "maximum minimum" of 40¢, without waiting for 1945.

Seamless hosiery manufacturers from four States met in High Point, N. C., on March 20 to discuss wage and hour problems of the industry. The meeting was sponsored jointly by the National Association of Hosiery Manufacturers and the Southern Hosiery Manufacturers Association. Present at the meeting were Earl Constantine, president of the national association; Taylor Durham, secretary of the southern association; and W. W. Neal, Sr., of Marion, N. C., and J. Lee Bausher of Reading, Pa., two of the three representatives of the industry on the National Seamless Industry Committee which later met in Washington, April 7, to discuss a proposed increase in wages by the hosiery industry.

# Scourolan

## THE DYER'S BEST FRIEND

Scourolan, used with soap, will remove grease, oil, and dirt that soap alone would fail to lift, leaving goods, clean, spotless, and lustrous for the dyehouse. Thus it saves time and money, prevents cloudy or streaky piece dyeing, smelly goods, or gummy handle, and promotes brighter and deeper colors.

When used for scouring stock dyed or yarn dyed fabrics, it is equally effective without harming the most delicate of shades. As an added protection, it may be used cold where colors are apt to bleed.

Small wonder that SCOUROLAN is called "The Dyer's Best Friend." May our service man show you how easy it is to use?

★

**COMPANION PRODUCTS**

FULLITIN . . . . fulls and scours COLD
EBCOMULSION . . . . for perfect handle
SOL-TAR . . . . . for removal of tar spots

**ERNST BISCHOFF COMPANY, INC.**

Established 1908

**Ivoryton** • **Connecticut**

*All* textile fibres are uniformly conditioned–at low operating cost–

with the **"H-W" CONDITIONER**

**WOOLEN – WORSTED**
**SILK – RAYON**
**NYLON – COTTON**

The many advantages of the "H-W" Conditioner —rapid and thorough treatment of the yarns, absolute uniformity in the application of moisture to lot after lot of yarn, penetration of the fibre by a finely-diffused, true water vapor which is developed at low, unharmful temperature — can be applied to ANY textile fibre.

We would enjoy showing you how the ingenious, patented design of the conditioning chamber eliminates the danger of condensation forming on the ceiling and dripping on the yarn, to cause wet spots.

In short — The "H-W" Conditioner gives you speed and thoroughness, constant uniformity of treatment through lot after lot of yarn (of any fibre), perfect conditioning at unharmful temperatures.

No free moisture — no condensation drip — Bristol controlling and recording hygrometer —time clock—motor drive—Monel or Stainless Steel lining—welded steel frame—Johns-Manville asbestos-board covering—Fiberglas insulation — nickel-clad steel floor — accommodations for any package, tray or truck.

*We cordially invite you to visit us at Booths 14 and 15 at the Knitting Arts Exhibition in Philadelphia.*

**THE INDUSTRIAL DRYER CORPORATION**
**STAMFORD, CONNECTICUT**

# Wool Labeling Hearing

*(Continued from page 86)*

ciation also appended to its brief a series of questions on numerous unsettled points, such as "Should woolen fabrics be labeled according to the percentage of the mix laid down in the mill or in accordance with test on finished fabrics?" and "Will there be any official test for content to determine compliance?"

National Association of Hosiery Manufacturers' brief was in agreement with that of the wool manufacturers in its main points. This brief brought up the added question as to whether FTC will regard it necessary that goods bought by the United States Government, made on Government specification and subject to rigid inspection, must also be labeled. The hosiery group already counts its product as an exception to Rule 10, which states that each separate garment or piece of a wool product must be labeled, as it is understood that only one stocking of a pair need be labeled.

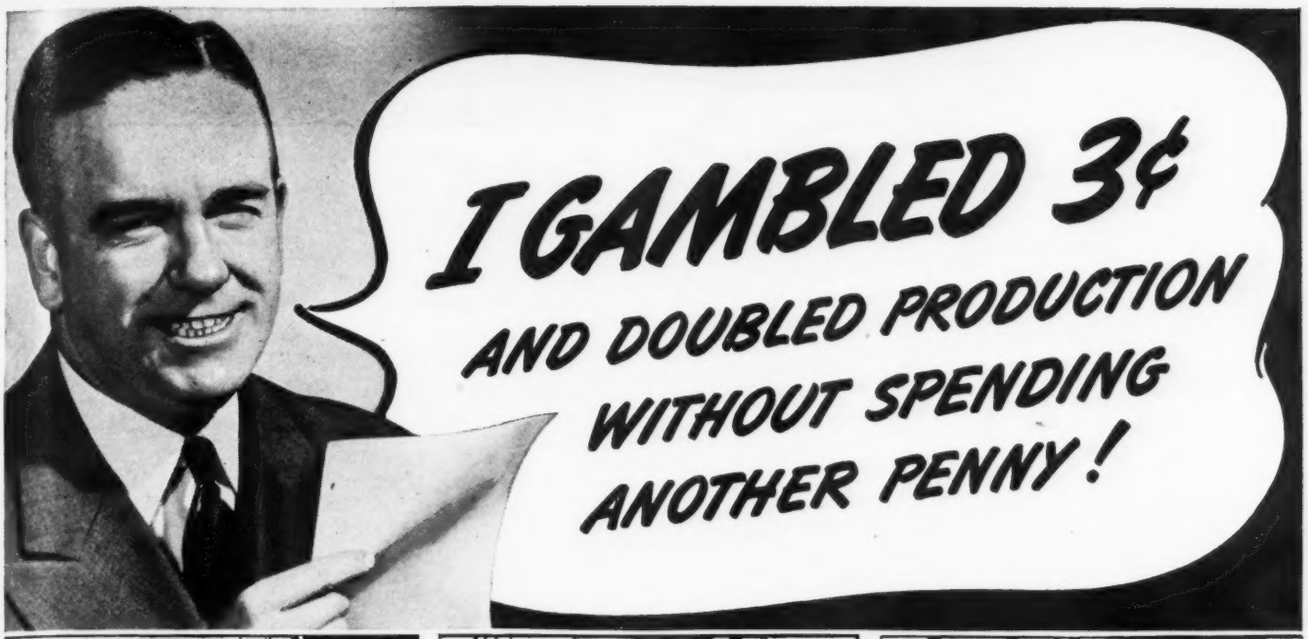
Underwear Institute went on record as opposing Rule 19 in which the words "virgin" and "new" as descriptive of a wool product are reintroduced to the trade although specifically omitted from the law. The Institute also brought up the question of the use of rubber in elastic bands at the top of underdrawers, shorts, etc., expressing the belief that since rubber was not a fiber its disclosure was not compelled under the law.

National Knitted Outerwear Association in its brief characterized Rule 10 requiring that labels be placed on each of several pieces of merchandise sold together as a single unit as "unduly onerous" and urged that one label to such a set be permitted. There was also objection registered to the use of "legal names" in cases where trade names were often more clearly in the minds of consumers than the actual firm name behind them. The brief pointed out that certain of the rules add nothing to the clarification of the act, and that other rules demand further interpretation.

National Federation of Textiles in its brief suggested stipulation by the Commission of an allowable variation of fiber content, due to unpredictable losses in manufacture, of say 5 points either way. The Federation also took issue with the interjection of such phrases as "virgin" and "new" as applied to wool. It brought up the question of how labels are to be attached, and the whyfore of guaranties if labels are to be attached to each product. It also pointed out that the act merely specifies the name of the manufacturer, while FTC Rule 9 indicates that the address should be used as well. Inasmuch as many labels have already been prepared, the Federation asks for guidance on this point.

Clothing Manufacturers Association of the U.S.A. found numerous difficulties and dilemmas as a result of a poll of its 250 members. There was particular interest in Rule 13 regarding substituted labels, and nearly all wanted greater clarification regarding what name must appear upon the label and particularly whether it is necessary that the written permission of a retailer be secured before his name may be used. The members also felt that it would be advisable to permit the use of a trade name registered in the U. S. Patent Office, where desired in place of the name of the manufacturer or distributor.

National Retail Dry Goods Association made a particular drive for the exemption of millions of dollars worth of wool products that will be on merchants' shelves when the law becomes effective July 14. The association is also deeply interested in the implication that a retailer is in inter-State commerce if his name appears on the required label. At the call of the N. R. D. G. A. a conference met in New York on March 26 at which there was a discussion of the law and the FTC rules.



**THIS MAY SOUND LIKE** a crazy story, but I'm here to testify that it's absolutely true. I do a big business in wool specialties. I'd been using the very same formula for years . . . and I was convinced it was just about the best I could get.

**I'D HAVE KEPT** on using it, too, if that youngster of mine (just starting in the business!) hadn't insisted that I have it checked. "Call in a C.P.P. man," he urged. "Suppose he can't show us an improvement. *What do we have to lose?*"

**SO I WROTE** Colgate-Palmolive-Peet to send a man around. After carefully checking our production methods, he recommended a new formula that cut processing time in half *without increasing fulling agent cost.* But that's not all!

**OUR PRODUCT** now has much better color! It has less odor! It doesn't discolor! It takes dyes better! Best of all, the trade has noticed the improvement! Our salesmen are really going to town now . . . and it looks like a great year—thanks to C.P.P.'s products and technical help.

***WHY NOT TAKE QUICK ADVANTAGE OF THIS FREE C.P.P. SERVICE? IT MAY SAVE YOU MONEY AT NO COST TO YOU!***

THE case of the textile manufacturer above is not just one isolated "case history." There are hundreds in Colgate-Palmolive-Peet's files. We maintain a staff of experts who are trained to do just this kind of detective work.

Give them a chance to inquire into your set-up . . . no matter how well satisfied you are at the moment. New discoveries are constantly being made. Perhaps they know just the way to show you a saving, or an improvement.

A 3¢ stamp is all the gamble we ask you to take. Write to Colgate-Palmolive-Peet Co., Industrial Department, Jersey City, N. J. Remember—*there is absolutely no obligation on your part.*

# COLGATE-PALMOLIVE-PEET CO.

***INDUSTRIAL DEPT., JERSEY CITY, N.J.***

"Those Dye-House Blues"

They're all sour notes to the foreman who is trying to create a profitable harmony between water, chemicals and fabric.

If you're using the best of everything without getting best results, maybe it's your water that's off key. Let us look into your supply and determine whether or not you really need a

**HUNGERFORD & TERRY WATER PURIFICATION SYSTEM**

If not, we'll say so. But if impurities are causing trouble we will give you the facts and figures on how to obtain 100% soft, clear, iron-free water for only a few cents per thousand gallons—water that assures whiter whites, cleaner colors, closer dye matching and the minimum of spoilage. . . . A survey involves no obligation whatever—write us today.

**HUNGERFORD & TERRY, INC.**
WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED
CLAYTON, NEW JERSEY

# NEWS ABOUT MEN

**Henry M. Bliss** was elected president and treasurer of Pacific Mills, Boston, at the annual meeting of stockholders on March 18, succeeding **Alfred E. Colby.** Mr. Bliss has been chairman of the executive committee of Pacific for about a year. He was born in Boston in 1895, and was graduated from Harvard College in 1917, later taking a course in worsted yarns for one year at Lowell Textile Institute. Much of Mr. Bliss' career of 22 years in textiles has been identified with the Massachusetts Mohair Plush Co., Lowell, of which for the last 10 years he has been the active manager in the offices of vice-president and treasurer. He is a director of that company, of the Second National Bank of Boston, and of Newmarket Mfg. Co., and a trustee of Ludlow Mfg. Associates. Mr. Colby has been president of Pacific for the last 15 years and for over 40 years with the company.

**J. J. Phoenix,** associated with Bradley Knitting Co., Delavan, Wis., since 1903, has resigned as president and director of the firm, effective when his successor is named. **P. J. E. Wood,** Janesville; **D. F. Byrnes,** Delavan, **Frank P. Burke** and **Russell Lindsey,** Milwaukee, have been elected to the board.

**Z. W. Wheland,** of Chattanooga, Tenn., has been elected president of Yates Bleachery Co., Flintstone, Ga., succeeding the late A. E. Yates.

**Ellis M. Johnston** has retired as chairman of the board of Easley (S. C.) Cotton Mills and the Woodside Cotton Mills, Greenville, S. C., but will remain a member of the board.

**Dudley Voorhees** has been elected a director and vice-president in charge of sales of the Harriman (Tenn.) Hosiery Mills.

**Fred W. Brunken** has been elected secretary-treasurer and manager of Dallas (Tex.) Cotton Mills Co., succeeding **E. S. Cunningham,** resigned.

**Thurmond Chatham,** Winston-Salem, N. C., president of the Chatham Mfg. Co., and regional vice-president of the National Association of Manufacturers, was one of the speakers at the joint meeting in Atlanta at Ansley Hotel, March 19, of the Associated Industries of Georgia, the Georgia cotton Manufacturers Association and the National Association of Manufacturers, when they met to discuss problems of industry arising from the defense program.

**George Curtis** and **Edwin W. Newton** have been elected to the board of Nashua (N. H.) Mfg. Co. at its 117th annual meeting. This gives the board 11 members.

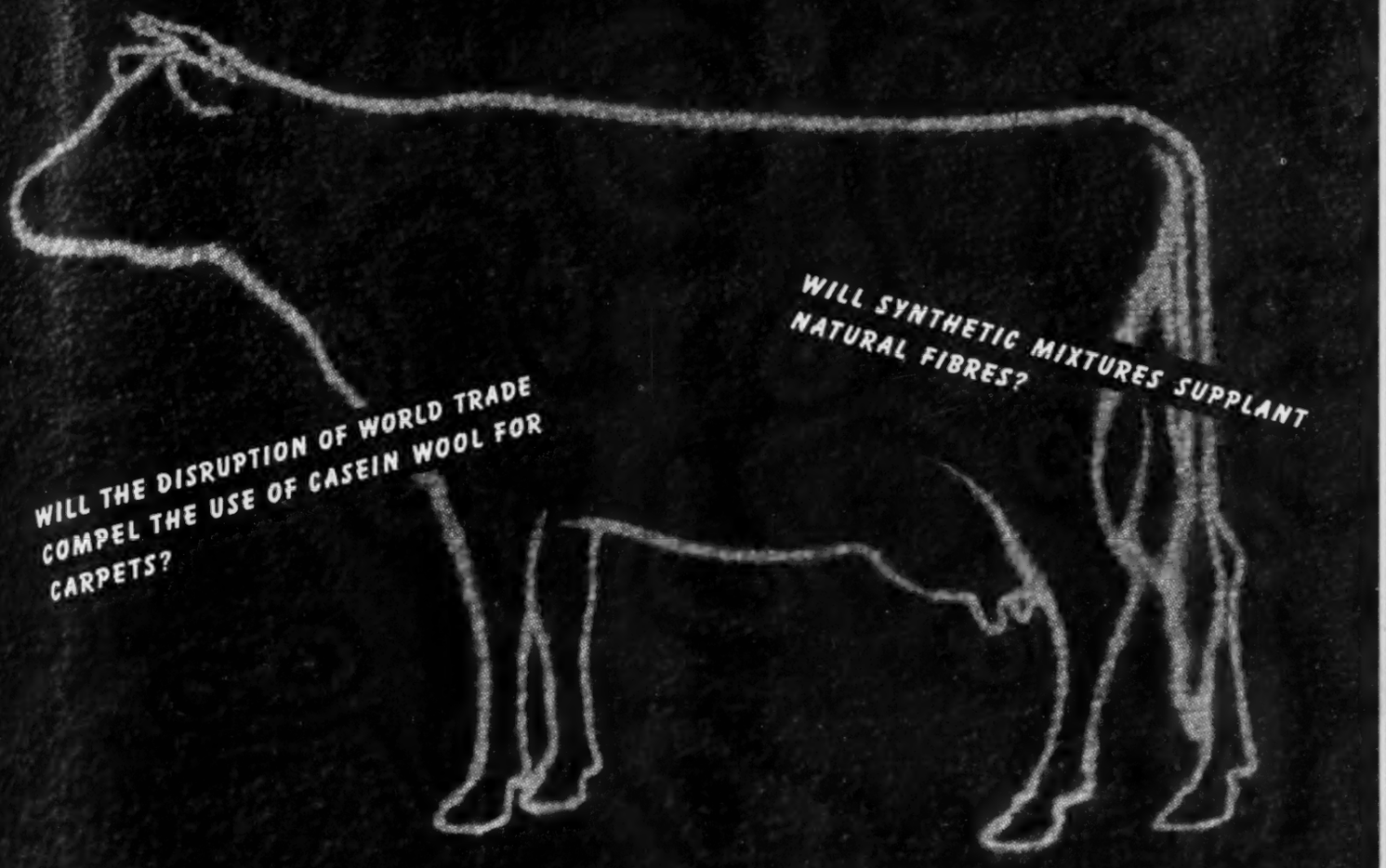
**Walter S. Montgomery** has been elected president and treasurer of the Beaumont Mfg. Co., Spartanburg, S. C., succeeding **Dudley L. Jennings** who retires after 36 years in those offices and nearly 50 years with the mill. Mr. Montgomery is also president of Spartan and Startex Mills, and an official of the Gaffney Mfg. Co.

**Donald Stewart,** for many years with Auchincloss, Parker & Redpath, New York brokerage firm, has been elected

## Rivitz Honored at Dinner on 15th Anniversary with Industrial Rayon

HIRAM S. RIVITZ, president of Industrial Rayon Corp., Cleveland, Ohio, was guest of honor at a dinner at the Oakwood Club, March 14, attended by 135 of his friends both in and out of the company celebrating his 15 years of leadership. Under the management of Mr. Rivitz the company has grown from a producer of 2,500,000 lb. of viscose rayon in 1926 to a 38,000,000 lb. producer. L. B. Williams, chairman of the National City Bank of Cleveland, presided. Tributes to Mr. Rivitz came from all sides. He was immortalized in song to the tune of "Ole Man River", with the closing line "When Old Man Rivitz Keeps Spin, Spin, Spinning Along!".

# *Will* CARPETS *come from* COWS ?


WILL THE DISRUPTION OF WORLD TRADE COMPEL THE USE OF CASEIN WOOL FOR CARPETS?
WILL SYNTHETIC MIXTURES SUPPLANT NATURAL FIBRES?

**Will these new synthetic fibres, new mixtures, new weaves, new finishes turn your dyehouse into a chemical laboratory? • Whatever fabrics you are required to dye, National Technical Service, with an unmatched composite experience in solving color problems in every industrial field, is anxious to help you work out the most economical formula for your next job. • We invite you to use nearby National Technical Service.**

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| PROVIDENCE | 15 Westminster St. | CHICAGO | 357 W. Erie St. | ATLANTA | 140 Peachtree St. |
| PHILADELPHIA | 200-204 S. Front St. | CHARLOTTE | 201-203 W. First St. | NEW ORLEANS | Masonic Temple Bldg. |
| SAN FRANCISCO | 517 Howard St. | GREENSBORO | Jefferson Standard Bldg. | TORONTO | 137-145 Wellington St., W. |

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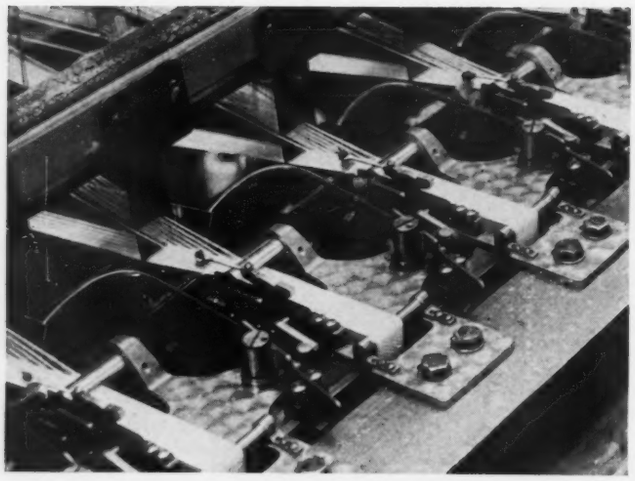


We have the pleasure of announcing that we are now able to give prompt delivery of the Clutsom High Speed Shuttleless Loom. We regret any delay in delivery which may have been caused by hostile action.

These narrow-fabric looms have been tested and approved over the last three years by many factories in many countries.

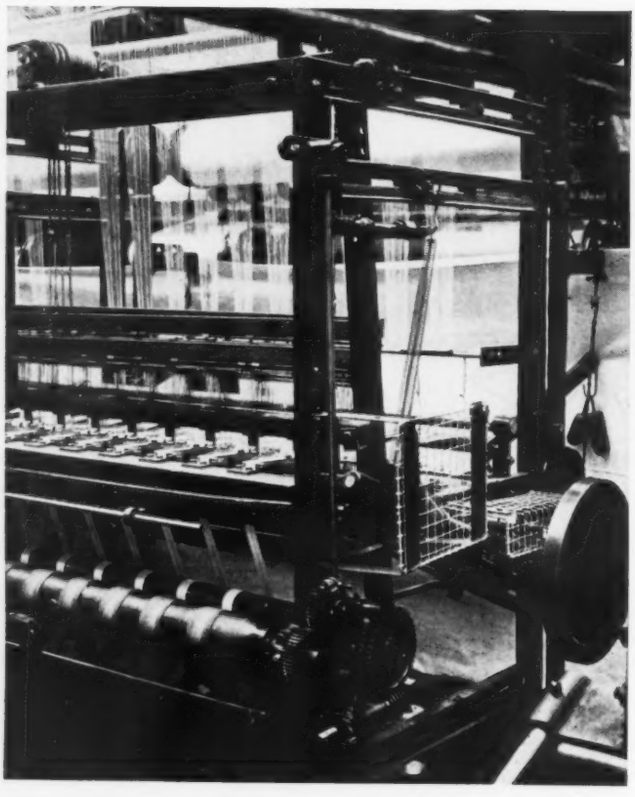
They are robustly constructed, give little trouble and are profit-producers.

They are adaptable to many purposes and if you feel that you could have use for such looms, Clutsom Machines, Incorporated would be pleased to hear from you and give you a demonstration.

**CLUTSOM MACHINES, INC.**

**250 WEST 54TH STREET NEW YORK**

**Telephone: Circle 6-8617**



## NEWS ABOUT MEN

president of Tiffany Print Works, Paterson, N. J., succeeding **Charles Levy.** Mr. Levy continues as sales manager.

**Frank Walton,** of Catlin Farish Co., New York, is now associated with the O. P. M. in Washington succeeding **W. Ray Bell,** president of the Association of Cotton Textile Merchants of New York. It will be recalled that Mr. Bell went to Washington several months ago to carry on the work with the Defense Commission which was started by **Robert T. Stevens,** head of J. P. Stevens & Co.

**Robert R. West,** former president of Riverside & Dan River Cotton Mills, Danville, Va., and in recent months director of the Bureau of Industrial Research at University of Virginia, has been appointed district manager of the defense contract service of the Office of Production Management for the Fifth Federal Reserve district. He will maintain an office in Richmond.

**Henry A. Stafford,** who has been associated with Ewing-Thomas Corp., Chester, Pa., since 1923, has resigned as vice-president and general manager of the corporation. Mr. Stafford and his family plan to move to Bethel, Vt.

**Ralph Hart,** of Hart Products Corp., New York, was guest of honor at a dinner on March 31. Many prominent textile men were present.

**James V. Young,** vice-president Hamilton Cotton Co., Hamilton, Ont., has been appointed assistant to the director of Ordnance Services, Technical Stores, Ottawa, Ont.

**J. C. Ewing,** associated with the executive office of Kendall Co., Paw Creek, N. C., has been named manager of the Kendall mills at Camden, S. C. to succeed **A. Stanley Llewellyn,** who resigned to become manager of two large textile plants in Spartanburg county.

**Colonel C. C. Tallman,** retiring superintendent of the West Virginia State police, has become assistant service superintendent at E. I. du Pont de Nemours & Co. plant at Belle, W. Va.

**G. I. Grant** has been appointed manager of Dominion Spinners, Ltd., St. Johns, Que.

**T. S. Crow,** formerly of Spartanburg, S. C., has become general superintendent of the carding department of Bladenboro (N. C.) Cotton Mills, No. 1 and No. 2.

**Arthur Ansley** has resigned as general manager for the firm of John Watts Sons, Roxboro, N. C., a position which he has held for the last four years, to accept the position of resident manager for the Wauregan-Quinebaug Mills, Danielson, Conn.

**Charles A. Knisel,** lately treasurer of Schwarzenbach-Huber Co., New York, has joined Edmund Wright Ginsberg Corp. as a special representative.

**Ed Synan,** active for many years in the New York gray goods market, is now in charge of the new sales office opened in New York by the Soule Mill, New Bedford, Mass.

**Leslie C. Tripp,** a graduate of New Bedford Textile School has been appointed a textile inspector by Army Quartermaster Corps and assigned to a plant in Bridgeton, N. J. Other New Bedford graduates who have been similarly appointed are **Earle W. Smith** to New York; **Thomas P. Barry** to Toledo, Ohio; **George Barron** to Norfolk, Va.

**Julius F. Murrin** has been named viscose assistant to the general plant manager of American Viscose Corp., Wilmington, Del. Other assistants named are **C. W. Buehl,** spinning assistant; **J. Watson Pedlow,** operations assistant; **Harry B. Garden,** processing assistant.

**Marshall B. Hall,** of New York, has been elected a vice-president and assistant treasurer of Adams-Millis Corp., High Point, N. C.

**Snydor Oden,** of Houston, Tex., has been elected president of the Texas Cotton Association.

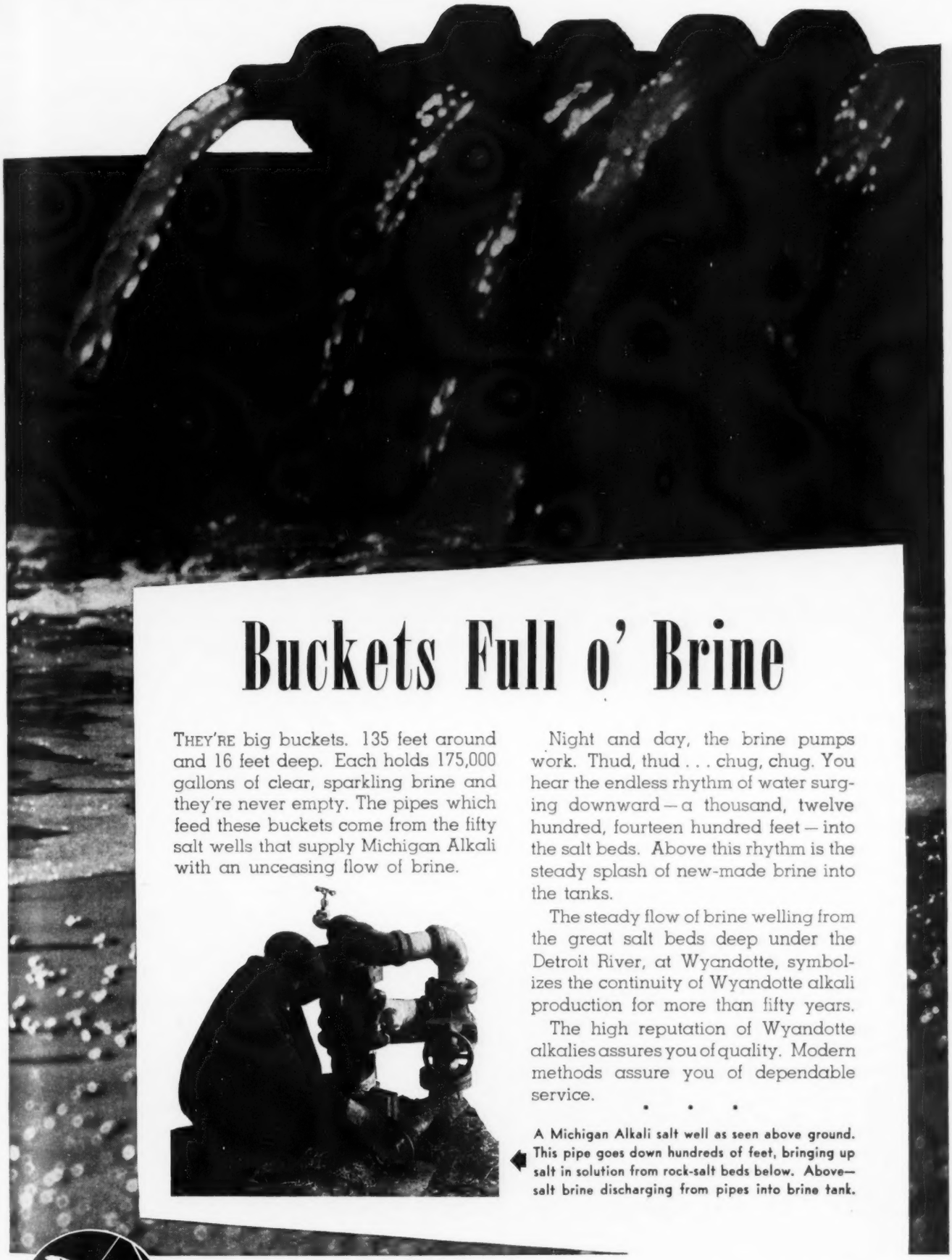
**Herbert A. West** now heads H. A. West & Co., Staffordville, Conn., making hand-woven textile products. He was recently with the Kentucky Loom Co., Louisville, Ky.

**John G. Bauscher,** lately engaged on a special study for Pacific Mills, has joined W. Harris Thurston and the Thurston Cutting Corp., New York. Mr. Bauscher was for over 25 years with the United States Finishing Co.

**W. J. Armfield, III,** is president of Burlington Hosiery Sales Co., New York, which functions as the selling house for the six hosiery mills of the Burlington Corp. **T. J. Mallon** is treasurer.

**Edward C. Wilson,** vice-president and sales manager of Munsingwear, Inc., Minneapolis, has been elected a director of that company.

**H. Clyde Moore,** of the Colonial Wool Co., Boston, has been elected president of the



# Buckets Full o' Brine

THEY'RE big buckets. 135 feet around and 16 feet deep. Each holds 175,000 gallons of clear, sparkling brine and they're never empty. The pipes which feed these buckets come from the fifty salt wells that supply Michigan Alkali with an unceasing flow of brine.



Night and day, the brine pumps work. Thud, thud . . . chug, chug. You hear the endless rhythm of water surging downward—a thousand, twelve hundred, fourteen hundred feet—into the salt beds. Above this rhythm is the steady splash of new-made brine into the tanks.

The steady flow of brine welling from the great salt beds deep under the Detroit River, at Wyandotte, symbolizes the continuity of Wyandotte alkali production for more than fifty years.

The high reputation of Wyandotte alkalies assures you of quality. Modern methods assure you of dependable service.

• • •

A Michigan Alkali salt well as seen above ground. This pipe goes down hundreds of feet, bringing up salt in solution from rock-salt beds below. Above—salt brine discharging from pipes into brine tank.

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ALKALIES are not just something to be taken for granted—*not any more.*

There are new developments in the use of alkalies that have an important bearing on processing methods in your industry — that affect definitely your ability to keep ahead of competition.

Solvay is in the forefront of this new activity, offering a technical service recognized as outstanding in the field.

Solvay technologists have not only done much of the research, they are also applying these findings in textile plants throughout the country.

We would be glad to give you full details on these new alkali developments. No obligations involved. Write or wire the nearest Solvay office.

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## NEWS ABOUT MEN

HENRY W. McCUSKER, president of the East Braintree (Mass.) Finishing Co., recently celebrated his 81st birthday. He entered the finishing plant of which his father was manager at River Point as a boy. Later he was superintendent of Aspinook Co. and agent of Lewiston Bleachery. His present company is associated with the Holliston Mill, Norwood, Mass., of which his son, Tom, is treasurer and general manager.

National Wool Trade Association.

**John F. Yare,** formerly manager of the Winchester Woolen Co., is now in charge of the Roniteau Mills, Ashaway, R. I.

**E. W. McLeod** of Carthage, N. C., has been elected superintendent and **J. T. Shotwell** of Henderson, N. C., assistant superintendent by their fellow students for the 1941 Students Textile Exposition at the textile school of North Carolina State College, Raleigh, N. C., in connection with the Style Show on April 24.

**Tom Morgan** for many years with Cluett, Peabody & Co., has joined sales organization of Riverside & Dan River Cotton Mills, New York, to take charge of fabrics for pajamas and shorts and to open a department for confined fancy shirtings.

**G. W. Hunter,** superintendent of the Kingston mill of the Duplan Silk Corp., has been named superintendent of the Berwick, Pa., mill, succeeding **M. E. Carodi** who has been transferred to the New York office. Mr. Hunter started 24 years ago as a bobbin boy with Duplan.

**L. M. Calhoun,** formerly with Drayton (S. C.) Mills, is now associated with Owens-Corning Fiberglas Corp., Newark, Ohio.

**Robert E. Duckett,** formerly employed in the designing office at Dunean Mills, Greenville, S. C., is now a member of the F. B. I.

**R. E. Bowland,** supervisor of 2-B Textile area, has assumed his new duties as supervisor of the Spruance plant of E. I. du Pont de Nemours & Co., Richmond, Va. He was succeeded by **Marion A. Steele.** Mr. Bowland has been with DuPont for 27 years.

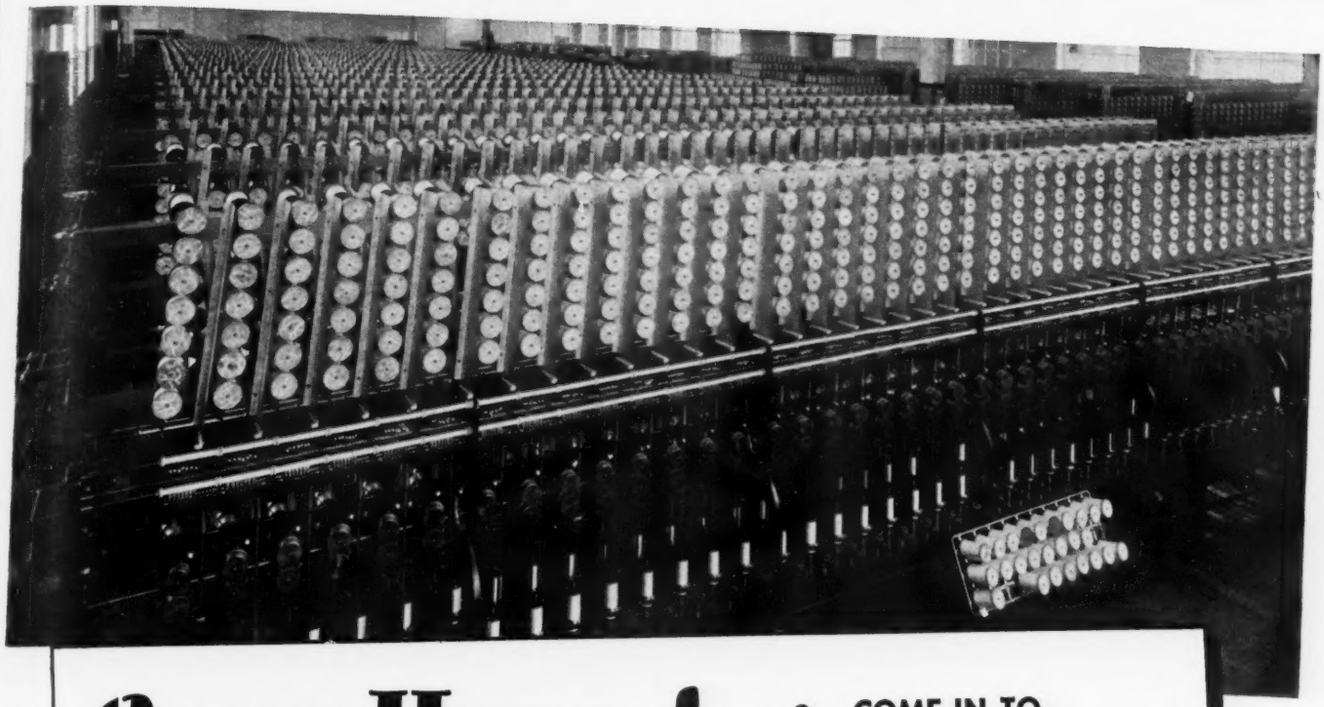
**C. W. Wilbanks** has become superintendent of Panola Mills Co. and Grendel Mills, Greenwood, S. C. He was formerly superintendent of Gayle unit of Springs Cotton Mills, Chester, S. C.

**B. P. Robinson** has been made secretary of the newly organized Deep River Mfg. Co., Randleman, N. C.

**J. J. Harney,** mill manager of Firestone Cotton Mills of Canada, Ltd., Woodstock, Ont., has been trasferred to the New Bedford, Mass., mill of Firestone Cotton Mills. **E. F. Sweeney** has been moved from New Bedford, Mass., as the new manager of the Woodstock mill.

**F. C. Todd,** cotton mill machinery dealer of Gastonia, N. C., has been appointed by the Gaston County commissioners to appraise and re-value the cotton mills of the county. This will require between five and six months.

**F. D. Wallace,** superintendent of Dominion Textile Co.



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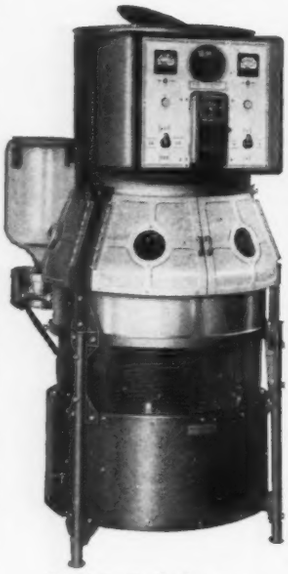

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**We speak from personal experience. The Atlas Fade-Ometer, in advancing the knowledge of fast-to-light dyes, in improving quality and in eliminating the possible inaccuracies of advertising of America's top-flight companies, has been of value far beyond the cost of purchase and the expense of operation. As an aid in arriving at a decision, our Research Dept. will gladly test a sample of your product without obligation.**

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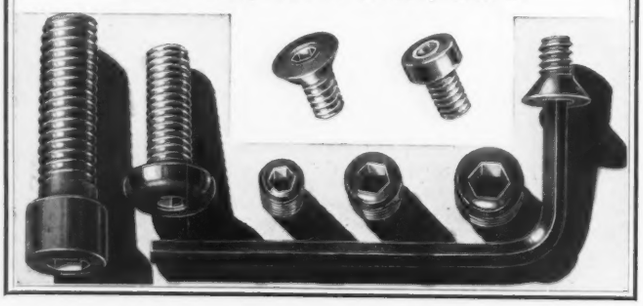
These specially-developed ALLEN Hollow Screws will cut your losses from *pulled threads.* Heads set perfectly flush with machine surfaces. No sharp edges to catch fabrics; screws are chamfered at the point, outside edge of head and top edge of socket. No slots to burr and pull threads; the internally operated hex key sets the screw easily, quickly and *tightly* without slippage.

Send specifications of diameter, length and thread or submit actual samples of screws you are now using. We will supply Allen samples developed for your particular application.

THE ALLEN MANUFACTURING COMPANY
HARTFORD, CONNECTICUT, U.S.A.




## NEWS ABOUT MEN

Ltd., Montreal, has been elected to the council of the Canadian Association of Textile Colorists & Chemists,, Quebec Section, at the fifth annual meeting of the association, held March 15 at Mount Royal Hotel, Montreal. Mr. Wallace replaces **R. G. Davidson.** All of the 1940-41 officers of the association were reelected.

**Tilton Worsted Mills, Inc.,** of Tilton, N. H., have elected the following officers: **Judge John W. Crawford,** president; **Lawrence A. Gilman,** vice-president; **Ruel E. Heywood,** treasurer and general manager; **Miss Elsie LaBelle,** clerk.

**Marion T. Grimes,** who has spent the last 18 months at Medellin, Colombia, South America, with the Cia de Tejidosde Rossellon, has returned to the United States and will act as purchasing agent in this country for that mill. The location of his office has not yet been announced.

**Edward Feen** of Flushing, Long Island, N. Y., has been appointed as research engineer of the Sulloway Mills, Franklin, N. H.

**Richard Penfield,** an official at the Amcelle unit of the Celanese Corp. of America, Cumberland, Md., when this unit first began to expand, became chief engineer on March 17.

**Miss Georgia Brune,** former director of sales promotion activities for American Beauty Products, Chicago, has joined the retail merchandising division of the advertising department of American Viscose Corp., New York.

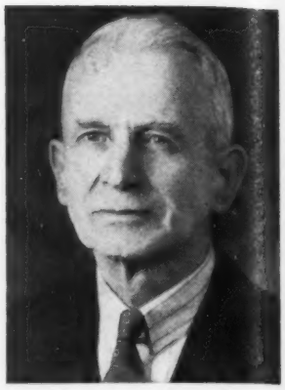
**L. J. Tuttle,** of High Point, N. C., effective March 10, became office manager of the Lexington, N. C., plant of Burlington Mills Corp., succeeding **J. Marshall Browning,** who resigned to devote his entire time to architecture.

**M. H. Jackson,** who has been overseer of carding and spinning at the Dunn unit of Armstrong Mills, Gastonia, N. C., has been promoted to superintendent of the Piedmont unit of the same company.

**G. M. Taylor,** formerly second hand in spinning at Gossett Mill, Anderson, S. C., has been promoted to overseer of spinning at the company's unit at Williamston, S. C.

**Stanley Plummer** has been named boss carder at Brook Woolen Co., Simcoe, Ont.

**W. C. Candler** has become superintendent of Villa Rica (Ga.) Cotton Mills. A graduate of the Alabama Polytechnic Institute, he was formerly with Callaway Mills, LaGrange, Ga.



DWIGHT W. CAIN who has retired on a pension as weaveroom superintendent at Cosmos-Imperial Mills, Yarmouth, Nova Scotia, after 55 years of service to that firm. When he got his first job there as an errand boy in 1886 the firm was known as Yarmouth Duck & Yarn Co. and 60 employees worked there. Today 450 are employed. In 1886 29 in. was the width of the widest goods; today it is 306 in. Mr. Cain's two sons Donald and Hugh have worked in the mill with their father since their boyhood.

**G. H. Mahaffee** has returned to Danville, Va., as overseer of No. 2 cardroom, Riverside Division, Riverside & Dan River Cotton Mills. He held this position before going to Alexander Mfg. Co., Paris City, N. C., as overseer of carding and spinning.

**George Grant** is the new superintendent of throwing at Dominion Spinners Ltd., St. Johns, Que.

**J. C. Swan** has become overseer of spinning and winding at Eastern Mfg. Co., Selma, N. C., succeeding **T. F. Harding,** resigned.

**Miss Carrie Ward** has been promoted from assistant to overseer of the cloth room of the Monaghan unit of Victor-Monaghan Co., Greenville, S. C., succeeding **J. P. Bagwell,** retired.

**J. T. Fry,** formerly with Graniteville Co., Augusta, Ga., has been transferred to position of assistant superintendent and overseer of weaving at Graniteville and Hickman units of the same company at Graniteville, S. C.

**L. E. Bagwell, Jr.,** has resigned his position with Avondale Mills, Birmingham, Ala., and become overseer of weaving at Beaumont Mfg. Co., Spartanburg, S. C.

**J. T. Chalmers,** formerly overseer of weaving at Inman (S. C.) Mills, has become

# NAPENIZE

## *The Positive Anti-Mildew Treatment*

THE word NAPENIZE has become the symbol of an extremely effective anti-mildew treatment. More and more canvas processors are approving this new treatment because of its definite and positive advantages.

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NAPENIZE gives the cloth a much greater degree of permanent protection—hence longer life and greater customer satisfaction. It's an easy treatment to apply and low in cost. Get further information about this real advance in anti-mildew treatment. Write Dow today.

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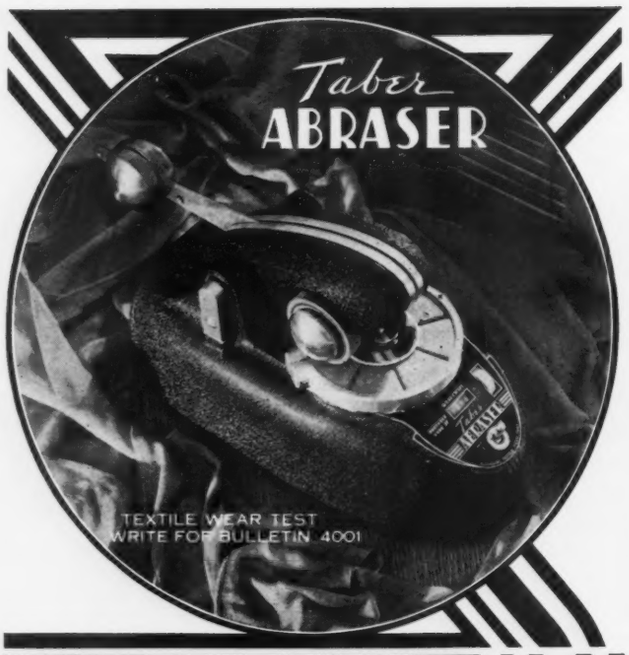


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46 YEARS OF UNFAILING SERVICE

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T.W.'41


## NEWS ABOUT MEN

overseer of weaving at Orr Cotton Mills, Anderson, S. C.

**G. M. Taylor** has been made overseer of spinning at Gossett Mill, Williamston, S. C.

**George Manton** has been named superintendent of weaving and throwing at the Cowansville, Que.. plant of Bruck Silk Mills Ltd.

**Clarence R. Duncan** has resigned as assistant superintendent of Glenn Mfg. Co., and of Melville Mill, both of Lincolnton, N. C., and has become a traveling salesman for Victor Ring Traveler Co.

**Oscar Nichols** has resigned as assistant to departmental superintendent of Monarch Mills, Union, S. C., a mill with which he has been connected for 25 years and has accepted a similar position with a mill at Fort Mill, S. C.

**J. V. McCombs** has become superintendent of Appalachian Mills Co., Knoxville, Tenn.

**Thomas B. Spencer** has become superintendent of Dacotah Cotton Mills, Inc., Lexington, N. C.

**Lee Sens,** formerly superintendent of the No. 2 unit of Glen Raven Cotton Mills, Kinston, N. C., has become senior cotton processing technician at the Department of Agriculture Regional Research Laboratory, New Orleans, La.

**Arthur Crosley,** general superintendent of John Watts Sons, Inc., Roxboro, N. C., has resigned to accept a similar position with an eastern mill.

**Wm. J. Yates,** Johnston Mills, has been elected president of the Chicago Yarn Men's Club for the coming year. **C. Walter Seidel** is vice-president, and **M. A. Henderson,** of Standard-Coosa-Thatcher Co., is treasurer. **C. M. Patterson** was reelected secretary. These elections took place at the annual meeting in Chicago March 17.

**C. F. Shepherd** has resigned his position with John P. King Mfg. Co., Augusta, Ga., and has become assistant superintendent of Greenville (N. C.) Spinners, Inc.

**G. L. Gaulden,** formerly with Pomona Mfg. Co., Greensboro, N. C., is now overseer of spinning at Edna Mills Corp., Reidsville, N. C.

**Henry A. Jaeger** is now sales manager of Wytheville (Va.) Woolen Mills, Inc., succeeding **B. Van Horten,** resigned.

**W. F. Christman,** who has held the position of assistant superintendent of the towel mill of Marshall Field & Co., Fieldale, Va., has been promoted to superintendent.

**J. A. Chasteen,** formerly with Marion (N. C.) Mfg. Co., has become overseer of weaving at Monroe (Ga.) Cotton Mills.

**J. C. Hooks,** formerly superintendent of Piedmont Mills, Gastonia, N. C., now holds the superintendency of Armstrong Mills, Gastonia, N. C.

**W. C. Cox,** formerly with Laurens (S. C.) Cotton Mills, has become general overseer of weaving at Mayfair Cotton Mills, Arcadia, S. C.

**F. H. Doft** has resigned as superintendent of the Belding (Mich.) Hosiery Mills. He has been with this company since 1934.

**Roy P. Dickson** has been promoted from loomfixer to second hand in the weaving department of Spartan Mills, Spartanburg, S. C.

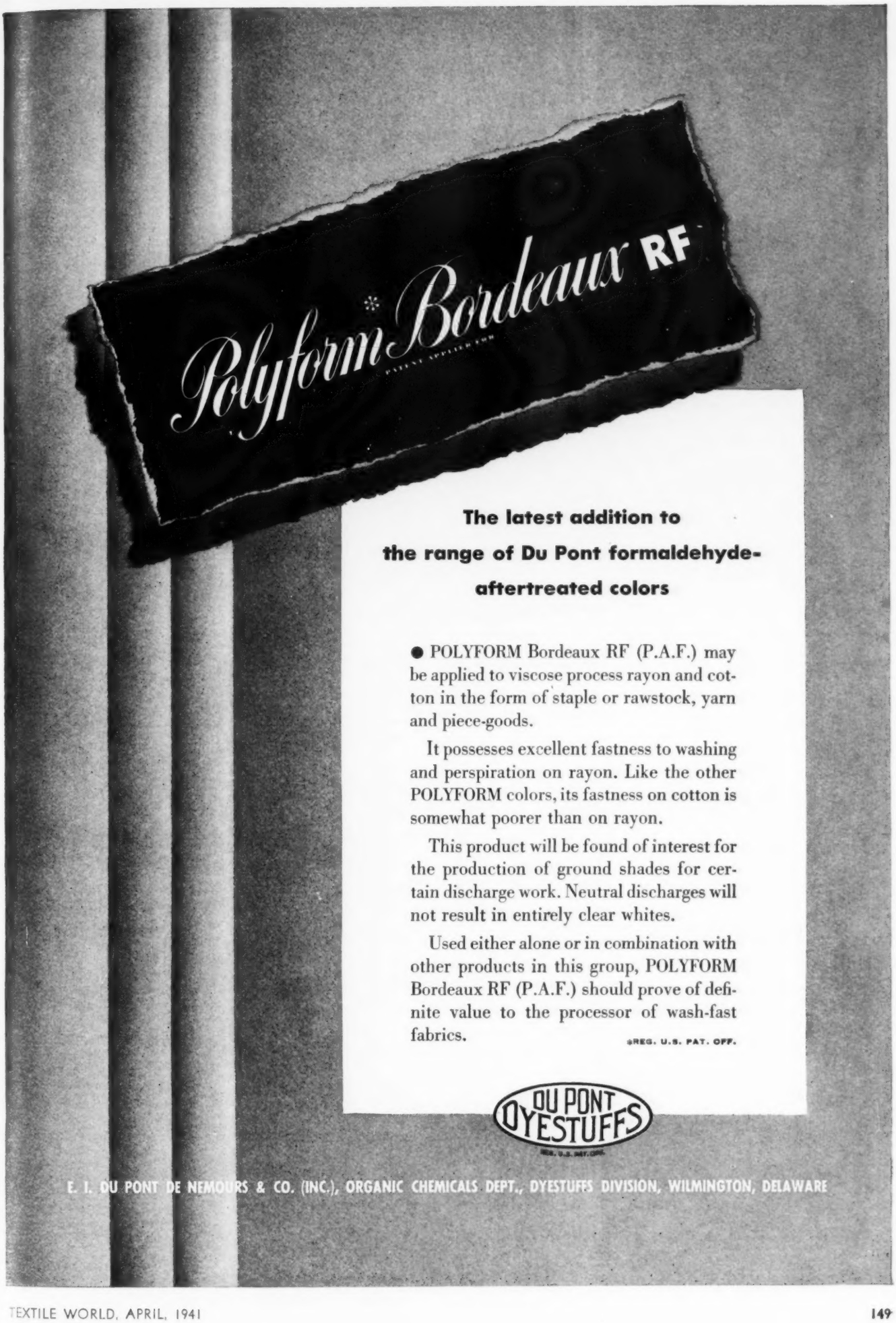
# Obituary

**Oscar Milton Godfrey,** 73, president and director of the Davis & Furber Machine Co., Andover, Mass., died at his home in that place on March 16, following a heart attack while at work in the plant. He was born in Candia, N. H., and his father, Edwin J. Godfrey, was founder and former president of the company. Mr. Godfrey entered the employ of the organization as a junior clerk in 1886, working his way to the presidency during his long connection with the enterprise. He was a trustee of the Lowell Textile School.

**John Rivers,** 71, president and treasurer of Dill-Ball Co., died in Charleston, S. C. He was the last of the great cotton factors who financed the Sea Island cotton industry in the days before the boll weevil destroyed it. He was president of the Charleston Cotton Exchange from 1935 to 1939.

**Lyndon W. Joyce,** 46, president and treasurer of the Greenville National Corp., died in U. S. Veterans Hospital No. 48 in Atlanta, Ga., on March 11. He founded the Southern Webbing Mills in Greensboro, N. C., and served as their president for fourteen years.

**William F. Ferguson,** 84, of Moncton, N. B., died recently. He was president of the




**The latest addition to the range of Du Pont formaldehyde-aftertreated colors**

● POLYFORM Bordeaux RF (P.A.F.) may be applied to viscose process rayon and cotton in the form of staple or rawstock, yarn and piece-goods.

It possesses excellent fastness to washing and perspiration on rayon. Like the other POLYFORM colors, its fastness on cotton is somewhat poorer than on rayon.

This product will be found of interest for the production of ground shades for certain discharge work. Neutral discharges will not result in entirely clear whites.

Used either alone or in combination with other products in this group, POLYFORM Bordeaux RF (P.A.F.) should prove of definite value to the processor of wash-fast fabrics.

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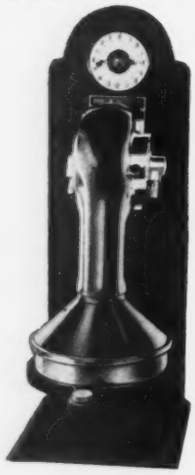
E. I. DU PONT DE NEMOURS & CO. (INC.), ORGANIC CHEMICALS DEPT., DYESTUFFS DIVISION, WILMINGTON, DELAWARE

*Rapid Accurate*

# MOISTURE CONTROL

*with the*

# DIETERT MOISTURE TELLER



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| *Stock in Process* | | *Raw Stock* | |
|---|---|---|---|
| Carding | Roving | Cotton | Silk |
| Drawing | Spinning | Wool | Rayon |
| *Yarn Buyers* | | *Finishers* | |
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and
## FRANKLIN CLAY

Both are non-abrasive and will not injure doctor blade, dull cutting knives or warp needles. Shipped in heavy paper bags.

*Testing samples and technical data sent upon your request.*

**UNITED CLAY MINES CORPORATION**

**TRENTON** **NEW JERSEY**

## NEWS ABOUT MEN

Ferguson Atlantic Underwear Co., and an executive of other enterprises.

**Philip S. Steel,** 73, a founder and until last year president and general manager of Mauney Steel Co., Philadelphia, died at his home in Gradyville, Pa., March 24. He was considered dean of the Philadelphia cotton yarn distributors, having entered the field in 1885. In 1918 in association with D. H. Mauney of Kings Mountain, N. C., he formed the Mauney Steel Co. He was one of the founders of the Association of Cotton Yarn Distributors.

**William A. Briggs,** for 38 years with Boston (Mass.) Woven Hose & Rubber Co., died in Atlanta, Ga., March 22. After 15 years in the plant, he was transferred to the sales department in 1918. He was appointed manager of the Southern Sales District at Atlanta in 1935.

**Charles E. Burling,** 79, who after many years in the woolen business founded Burling, Dole & Co., auctioneers, in 1902, died in Centerport, N. Y., March 28.

**Mony J. Warner,** 72, for years a leading figure in the New York converting trade, died late last month. He was a member of the old firm Warner, Godfrey & Co., and later founded his own firm, M. J. Warner & Co. He was president of the old Converters Association (now the Textile Fabric Association) from 1925 to 1930.

**Leonard Howard,** personnel manager, Dunean Mills, Greenville, S. C., died recently.

**Randolph H. Lamprey,** 47, long associated with North Star Woolen Co. and lately manager of the firm's New York office, died March 22.

**James B. Sinnamon,** 70, associated with Allen R. Mitchell & Son for 55 years and lately head of the firm's New York office, died at his home in Ridgewood, N. J., March 23.

**J. W. Hinchey,** who for some years represented the Modine Mfg. Co., Racine, Wis., in Atlanta, Ga., died March 9.

**H. M. Remington,** 57, widely known in the Philadelphia cotton yarn trade, died in Germantown, Pa., March 23.

**Samuel W. Thornton,** 58, Hartwell, Ga., vice-president and general manager of Hartwell Cotton Mills, president of Hartwell Railway Co., and prominently identified with other companies, died recently.

**Thomas A. Maynard,** 78, Winder, Ga., who assisted in organizing the Winder Cotton Mill, banker and business man, died March 14.

**Harold E. Houseman,** 49, of Scott & Williams, Inc., Laconia, N. H., died March 21. He was the son of Harry A. Houseman, inventor of the Standard machine and president of the Standard Machine Co. of Philadelphia. He was vice-president when that company merged with Trump Brothers in 1924.

**Joseph W. Stanley,** manager of the Commonwealth Color & Chemical Co., Ltd., died recently in Montreal, Que.

**Thomas M. Gardner,** secretary of the Southern Brighton Mills, Shannon, Ga., died Feb. 28 in an Atlanta hospital.

**Wilton Earle Mays, Sr.,** 72, secretary of Glenwood Mills, Easley, S. C., and of Pickens (S. C.) Mill, died March 8.

**William H. Caldwell,** 68, retired agent of Jackson Mills of Nashua Mfg. Co., died in Nashua, N. H.

**Frank L. Bugbee,** 76, assistant treasurer of the Homestead Woolen Mills, West Swanzey, N. H., died March 4 in Boston, Mass.

**James Furman Burgess,** 74, cotton buyer for Arkwright (S. C.) Mills for many years, died March 8.

**Richard P. McKinney,** 62, engineer at Grendel Mill, Greenwood, S. C., died March 13.

**Buford Heggood,** 51, assistant overseer of carding at Lanett, Ala., mill of the West Point Mfg. Co., died recently.

**Homer E. Wise,** 40, superintendent of water and steam engineering department of Celanese Corp, of America, Cumberland, Md., died recently.

**W. W. Smith,** 48, for the last three years overseer of carding at Borden Mfg. Co., Goldsboro, N. C., died recently.

**Herbert L. Parker,** 56, treasurer of Parker Spool & Bobbin Co., Lewiston, Me., died last month.

**Yancey H. Bivings,** for 26 years with Southeastern Cottons, Inc., and its predecessors covering the southeastern territory, died in Dallas, Tex., last month.

**John M. Pfaudler,** 93, founder of the Pfaudler Co., maker of glass lined tanks died in Rochester, N. Y. March 13. He was in control of the company from 1878 to 1902 when it was sold.

**Albert Walker,** president of Ontario Dyeing Co., Philadelphia, Pa., died last month.

ALKALI

**HAVE YOU TRIED STANDARD KIER BOILING SERVICE?**

A feature of Standard Textile Research is our Free Kier Boiling Service, maintained to help you make your formula most effective, improve whiteness, minimize tensile strength loss, secure maximum absorbency. Put *your* problem up to Standard!

Combining the highest soil-suspending power with controlled alkalinity over a wide range, Standard Silicates are first choice everywhere for

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To help you quickly develop the best procedure for your particular needs, STANDARD maintains complete laboratory equipment for Textile Research. Make use of this service—*it costs you nothing!*

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If by that you mean atomizer humidification—the finest kind—trouble free operation, low maintenance, and long life, then of course it's another atomizer.

If you mean the ordinary high power cost for atomizer humidifying, then the Type B is not just another atomizer for, as so many mills have learned, Rihco has found a way to save fifty cents of every dollar formerly spent for operating cost. Add to this, lower cost for installation or getting more humidifying from present equipment. That's why in so many mills it's Rihco systems.

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*Scott Tester methods of testing and of expressing the results, are recognized as standard by Governments, Societies and technicians the world around.

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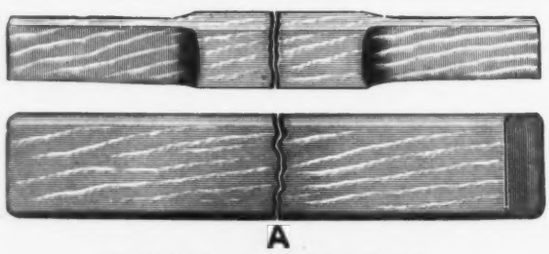
HENRY L. SCOTT CO., Providence, R. I.



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## DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY Cedar Brook, N. J.


# TEXTILE MILL NEWS

## Cotton Mill News

**Aberfoyle Mfg. Co. of Canada, Ltd.,** Guelph, Ont., has installed additional winding and coning equipment to meet increased demand for mercerized yarn by full-fashioned hosiery mills.

**Alabama Textile Products Corp.,** Andalusia, Ala., is constructing two new buildings. One will be four-story, 70 x 135 ft., and a warehouse, 60 x 180 ft.

**Aragon - Baldwin Cotton Mills,** Rock Hill, S. C., is constructing a three-story and basement addition to local Aragon plant. Cost reported over $60,000, with equipment.

**Associated Textiles of Canada, Ltd.,** Montreal, Que., plans one-story addition to mill at Louiseville, Que., to cost about $50,000, with equipment.

**Athens** (Ga.) **Cotton Mills** plan one-story addition for warehouse. Building and equipment will cost $125,000.

**Beaumont Mills,** Spartanburg, S. C., will soon install new spinning machinery and new warpers.

**Berryton** (Ga.) **Mills** have installed eight new combers.

**Borden Mfg. Co.,** Goldsboro, N. C., has changed over the entire spinning department to long draft. The company has installed two Whitin Inter-Draft frames, and four 8 x 4 Whitin speeders.

**Canadian Cottons Ltd.,** have completed the construction of an addition to its Stormont Mill at Cornwall, Ont., and now have an additional 2,500 sq. ft.

**Central Falls** (N. C.) **Mfg. Co.** has awarded contract for a two-story addition, totaling about 20,000 sq. ft. of floor space. The first floor will be for yarns and cloth, and the second for a cloth room.

**V. Dionne & Fils** are having a new building erected at St. Georges de Beauce, Que., for spinning rayon staple fiber. It will be two-story, 100 x 50 ft. A modern but used cotton yarn spinning plant of 7,600 spindles and complementary equipment was recently bought from a United States concern.

**Dwight Mfg. Co.,** Gadsden, Ala., will continue its modernization program with planned expenditure approaching $3,500,000 over next 10 years.

**Joseph P. Erkes,** Rock Hill, S. C., has begun operation of a local mill on pile fabrics, occupying building previously used by Victoria Cotton Mills, Inc.

**Esther Mill,** Shelby, N. C., plans installation of 60 new looms, costing about $50,000, to replace existing machinery.

**Harmony Grove Mills,** Commerce, Ga., is erecting additions designed by F. D. Millstead, East Point, Ga. Plans include a 3-story picker and clothroom and a 1-story slasher-room addition.

**Hawkinsville** (Ga.) **Cotton Mill** has recently completed installation of a bleaching department.

**High Falls** (N. C.) **Mills** are now being operated by John M. Presnell as lessee.

**Hyde Park Mills, Inc.,** of which J. R. Orton, of Cincinnati, Ohio, is president has purchased the O'Cedar Mills in South Covington, Tenn. J. A. Conner continues as general manager. The mill has 200 workers and for 18 months has been working on three shifts. It produces yarns for the O'Cedar Corp., Chicago.

**Judson Mill,** Greenville, S. C., recently sold 80 houses in its village, boosting total disposals of mill-owned residences to 325. Proceeds are being reinvested in a modernization program, which includes purchase of several hundred new looms, additional twisting machines for rayon and complementary equipment for the handling of rayon.

**Lockmore Cotton Mill,** York, S. C., idle for the last two years, will resume operations soon.

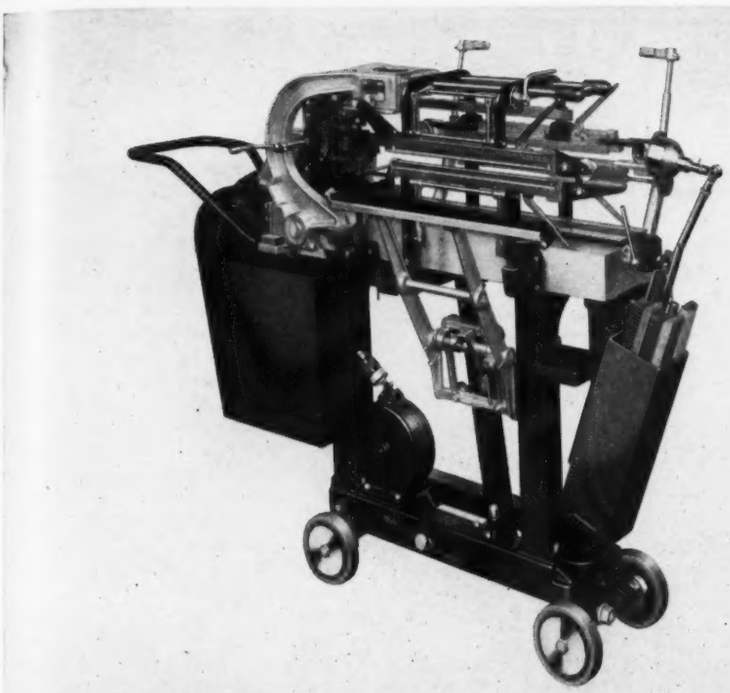
**Mallison Braided Cord Co.,** Athens, Ga., has been purchased by Harold H. Hinton from the estate of L. F. Edwards.

**Mathews Mill,** Greenwood, S. C., has been granted a certificate of necessity to expand its mill.

**Merrimack Mfg. Co.,** Boston, Mass., is considering a modernization and improvement program at mills in Lowell, Mass., and Huntsville, Ala., covering large replacements in present machinery and equipment. Cost estimated in excess of $1,200,000.

**Mills Mill,** Greenville, S. C., announces plans, through N. P. Ligon, general manager of the company, for expending between $200,000 and $250,000 on new machinery.

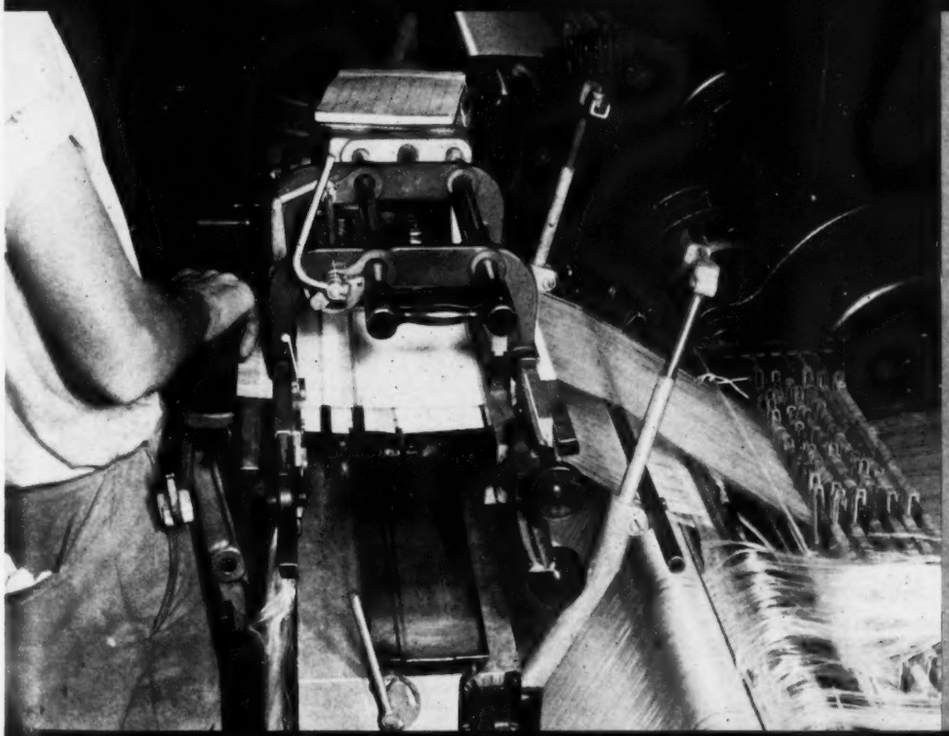
**Pacific Mills,** Lyman, S. C., has awarded contract to C. M. Guest & Sons, Anderson, S. C., for an addition to their finishing plant of about 40,000 sq. ft. The expansion program



For
COTTON
RAYON
or
WOOL

# QUICKER WARP REPLENISHMENT

## With Barber-Colman PORTABLE Warp Tying Machines



*This machine works directly in back of the loom and is easily and quickly portable from one loom to another. Works in alleys as narrow as 12". Ties-in ends uniformly, accurately, and quickly. Makes straighter warps and reduces warp replenishment time to a minimum.*

**BARBER-COLMAN COMPANY**

**ROCKFORD, ILLINOIS, U. S. A.**

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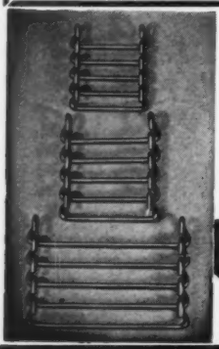
**OPPORTUNITIES**
**TO IMPROVE YOUR PRODUCT AND SAVE YOUR MONEY . . .**



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Accurately made from high grade material—built to last and to hold its shape.

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The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

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**DRUMMOND SOAP**
***RINSES*** **- - EASILY AND COMPLETELY**

- Saves scouring time and steam costs—Improves fulling and scouring operations.
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**NOVELTY-YARNS**
For
WEAVERS-KNITTERS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns




will cost about $100,000. Lockwood-Greene Engineers, Inc., drew the plans.

**Raybestos Mfg. Division,** Raybestos - Manhattan, Inc., Stratford, Conn., has begun erection of a one-story addition, 60 x 360 ft., to cost over $100,000, with equipment.

**Rhodhiss (N. C.) Mfg. Co.** has equipped the No. 1 weave room with fluorescent lights. The company has lately painted both No. 1 and No. 2 mills.

**Standard-Coosa - Thatcher Co.,** Piedmont, Ala., is constructing an addition 107 x 155 ft., two stories, which will cost $30,000.

**Swift Mfg. Co.,** Columbus, Ga., will erect a 2-story addition to its office from plans drawn by Robert & Co., Atlanta, Ga.

**Victor - Monaghan Co.,** Greenville, S. C., with units also at Greer, S. C., and Walhalla, S. C., has sold the last five company-owned stores.

## Wool Mill News

**Abbott Woolen Mills,** Dexter, Me., has awarded a general contract to A. R. Kenney, Bangor, for the construction of a 3-story addition 50 x 60 ft. to cost $20,000.

**American Hair & Felt Co.,** Chicago, Ill., has awarded general contract to Fred Kutschenreuter, Wauwatosa, Wis., for one-story addition, 42 x 60 ft., to mill at 944 North 46th St., Milwaukee, Wis. Cost estimated about $20,000, with equipment.

**St. Jean Spinning & Combing Co.,** Burrillville, R. I., was completely destroyed by fire on March 23.

**Artex Woolens Ltd.,** Hespler, Ont., a new concern capitalized at $40,000, has opened a mill in that town. The company has just purchased six Crompton & Knowles 4-box looms to operate with seven other looms on women's fancy tweed coatings and dress goods. The firm spent $20,000 in making alterations and additions to its mill building.

**Blueridge Co., Inc.,** Glasgow, Va., is constructing a one-story addition for warehouse. Building and equipment will cost about $80,000.

**Sidney Blumenthal & Co.,** New York, is erecting a dyeing and finishing plant at Rocky Mount, N. C. Company has acquired a plant near Wilson, N. C. and is installing additional looms. Commercial production of these units will be available this summer.

**William Collie,** Appleton, Ont., has installed one set of Whitin 60 in. woolen cards, and two Whitin wool spinning frames, 120 spindles each. Four Crompton & Knowles woolen looms are to be installed.

**Collins & Aikman Corp.,** Bristol, R. I., has closed bids for erection of two-story addition, 170 x 185 ft., to cost about $160,000, with equipment, and will begin work soon.

**Empire Rug Mills Ltd.,** St. Catharines, Ont., a branch of Empire Rug Mills, Cobourg, Ont., is drawing plans for two brick one-story additions, 14 x 94 ft. and 14 x 48 ft.

**Hayward-Schuster Woolen Mills, Inc.,** East Douglas, Mass., have been chartered with capital of $50,000, to take over and operate the local mill of Hayward Woolen Co. Theodore W. Monroe is president and treasurer.

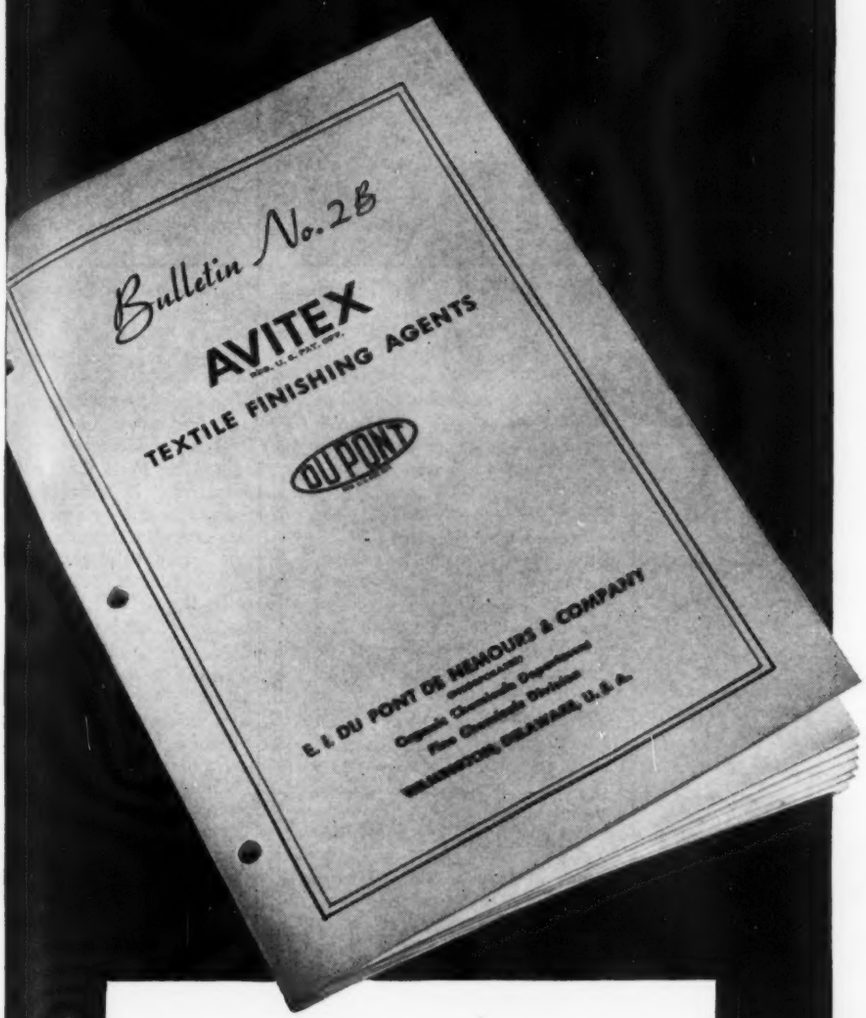
**A. & M. Karagheusian, Inc.,** Freehold, N. J., have awarded general contract to Steele, Pownall & Gebhardt, Philadelphia, Pa., for a four-story addition, 71 x 121 ft., forming a top extension to an existing one-story structure. Cost estimated over $250,000,

## Abstracts from Recent Financial Statements

**Net profit, or net loss when preceded by minus sign**

| | 1940 | 1939 |
|---|---|---|
| Mt. Vernon-Woodberry Mills | $787,807 | $335,997 |
| Cannon Mills | 3,831,858 | 3,595,536 |
| Holeproof Hosiery Co. | 50,054 | 141,000 |
| Davenport Hosiery Mills | 288,100 | ..... |
| Kendall Co. | 869,834 | 934,043 |
| Mock, Judson, Voehringer Co. | 400,553 | 470,609 |
| Canadian Celanese, Ltd. | 1,341,429 | 1,876,595 |
| American Benberg Corp. | 783,527 | 1,228,982 |
| North American Rayon Corp. | 1,781,426 | 2,010,252 |
| Adams-Millis Corp. | 472,250 | 553,163 |
| Celanese Corp. of America | 6,376,896 | 6,374,100 |
| Riverside Silk Mills, Ltd. | 53,483 | 80,742 |
| Hamilton Cotton Co., Ltd. | 137,948 | 100,145 |
| Monarch Knitting Co., Ltd. | 46,875 | 101,248 |
| New England Industries, Inc. (Five Maine Mills) | −776,983 | −478,330 |
| American Hair & Felt Co. | 410,109 | 376,987 |

# HAVE YOU SEEN THE DU PONT CONDENSED TREATISE ON TEXTILE FINISHING AGENTS ?




**WRITE FOR BULLETIN 2B**

▶ *The varied uses of AVITEX products in textile finishing are described. Data for practical working conditions are given and the results of extensive research outlined for quick reference.*

THE fatty alcohol sulfates, when introduced, established a new standard of quality in textile finishing. New developments, with special characteristics and working properties, now broaden the usefulness of the earlier types. These new products have all met with enthusiastic reception. They have given the finisher a tool for producing superior finishes that can be recognized readily by the converting trade and the consuming public.

Important advantages of the AVITEX products are: (1) The improved whiteness of whites and clarity of colors. (2) Freedom from storage rancidity and "yellowing," characteristic of older types of finishes. (3) The economy with which they can be used.

AVITEX products are stable to oxidation and resistant to decomposition on heating. They do not develop yellow discoloration in hot processing. This last property is especially important in view of the high temperature drying and preshrinking operations now used.

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**TEXTILE FINISHING AGENTS**

**E. I. DU PONT DE NEMOURS & CO. (INC.), FINE CHEMICALS DIVISION, WILMINGTON, DELAWARE**

# WHITMAN Yarns

ARLINGTON MILLS
LAWRENCE, MASS.

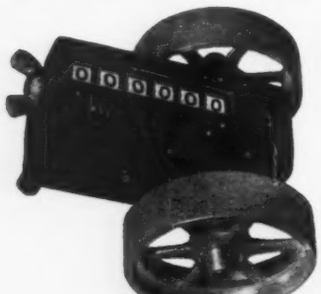
CRAMERTON MILLS
CRAMERTON, N. C.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

NONQUITT MILLS
NEW BEDFORD, MASS.

**WILLIAM WHITMAN COMPANY, Inc.**
NEW YORK BOSTON PHILADELPHIA CHARLOTTE





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RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

*Write—Phone—Wire*

**WAK** INCORPORATED CHARLOTTE, N.C.

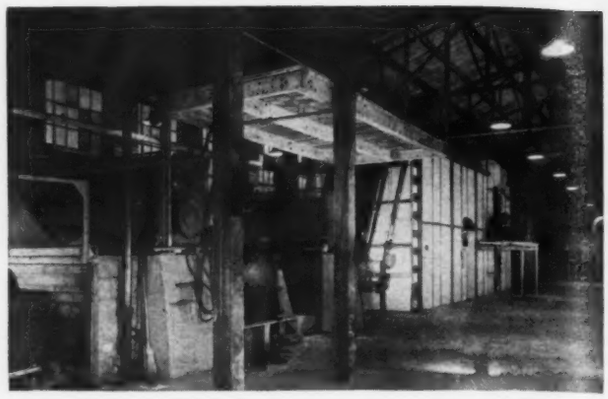


H. G. LORD *comments on*

# Reading Habits

*See page 6*



RIGGS & LEONARD cloth carbonizing range recently installed by Peerless Woolen Co., Rossville, Ga., is believed to be largest of its type in this country. It is designed to carbonize fabrics weighing up to 32 oz. at speeds of 17 to 20 yd. per min., and is capable of handling cloth up to 80 in. wide. An unusual feature of the range is that the cloth is dried and set to width on a tenter dryer before it passes into the baking compartment. If desired, the tenter dryer can be used as an independent unit when it is not necessary to operate the carbonizer. Equipment shown in illustration consists of wetting-out box, squeeze-roll extractor; acid soaking tank, acid squeeze roll extractor, tenter dryer, and baker. Leaving this range, the cloth passes through a pot-eye, then—in rope form—to a continuous dry fulling mill, and finally to a continuous neutralizing machine

with equipment. H. E. Corl is engineer. Company recently has acquired property formerly occupied by Brakely Canning Co., consisting of a tract of about seven acres of land at Manalapan and Bowne Aves., improved with a group of 20 one-story buildings, and will use a portion of property for storage.

**Mohawk Mills Ltd.,** Hamilton, Ont., are constructing a modern building at the rear of their present plant to accommodate twisting, winding and storage departments. The new section will contain 16,000 sq. ft. floor space.

**Maitland Spinning Mills Ltd.,** Listowel, Ont., owned and operated by Mercury Mills Ltd., Hamilton, have added two new buildings. The company also plans to modernize its 6-set woolen carding department and to add worsted spinning department. The dyehouse has been doubled by a 100 x 36 ft. addition. Installed are a four-bowl tape-scouring machine with Knowles parts and Mott tubs, a new stainless steel skein dyer, and a loose-wool dyeing machine. New worsted spinning equipment consists of four Prince-Smith & Stells large-package spinning frames.

**Paragon Worsted Co.,** Providence., R. I., has filed plans for a 2-story addition, mill construction, 85 x 86 ft. Walter F. Fontaine, Inc., Woonsocket, prepared plans for the project, work on which will begin during April.

**Paris Wincey Mills Co. Ltd.,** Paris, Ont., have erected a brick and steel one-story addition, 46 x 35 ft. which will double its dyeing capacity. Equipment has been installed for raw stock and piece-dyeing. The firm is making shirting for Canadian soldiers as well as its regular lines.

**Robert R. Pent Co.,** Philadelphia, has established the first wool combing plant in Texas, near New Braunfels. It is reported that the plant operates four sets of cards and four Bradford-system combs.

**Renfrew Woolen Mills,** Renfrew, Ont., has purchased a Fearnaught picker, two sets of 60 x 60 Whitin cards, six Whitin spinning frames, eight Crompton & Knowles automatic looms, two new automatic filling winders of the Whitin-Schweiter type, a new Hunter fulling mill, a new piece-goods dryer and a new washer.

**Textile Weavers Ltd.,** Grand'mere, Que., have added another set of Whitin 60-inch cards and three large-package wool spinning frames. The weaving department will be increased with 12 new Crompton & Knowles woolen looms bringing total to 48.

**Texas Scouring & Wool Mfg. Corp.** Marble Falls, Tex., opened April 3. It has a normal scouring capacity of 1500 lb. of greasy wool per hour. W. K. Shipman is president, L. D. Murray vice-president and general manager; M. B. Murray, secretary; Wm. H. Knowles, superintendent and wool buyer.

**West Coast Woolen Mills Ltd.,** Vancouver, B. C., are erecting a boiler house at 520

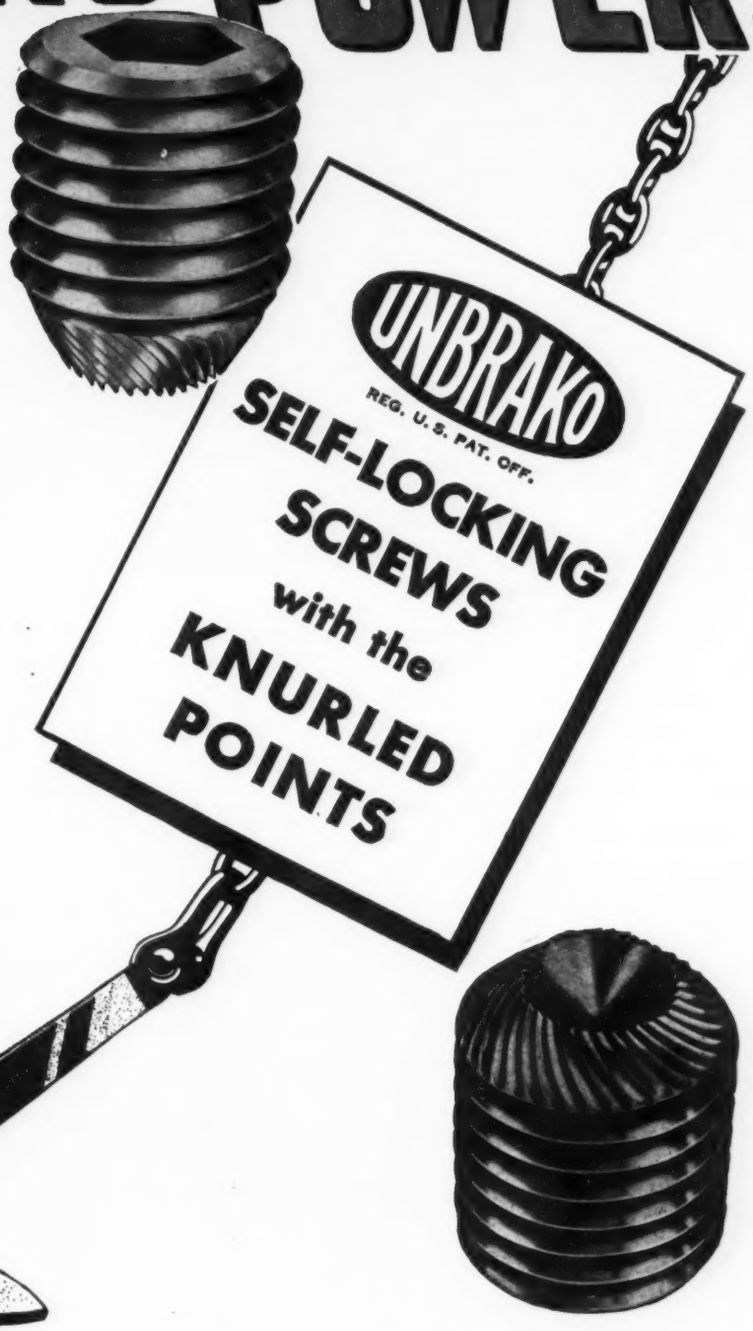
# HOLDING POWER!

JUST as anchors dig in and hold, so do "Unbrako" Self-Lockers anchor into place with a really dependable grip!

Set them up with no more than usual effort and the ingenious "Unbrako" knurled points dig in . . . hold tight. No matter how severe the unwinding tendency, "Unbrako" Self-Lockers can't work loose. Yet they're easily adjusted or removed and they can be used many times over with equal effectiveness.

Contrast this unfailing Knurled "Unbrako" protection with the uncertain performance of ordinary set screws which are sometimes the cause of costly breakdowns and delays because of their failure to hold. Small wonder that maintenance men in many of the largest and best known mills in the country have standardized on "Unbrako"!

How about your own setup? If you're not using them already, "Unbrako" Self-Lockers can save you a surprising amount of trouble and expense. Try them next time . . . but be sure to SPECIFY "UNBRAKO"!

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# PARAMOUNT Dual Heat Hosiery Finishing Machine

CREATING Incomparable Quality in Hosiery Finishing and Establishing Production Figures that are truly amazing, the Paramount Dual Heat Machine will revolutionize and simplify your hosiery drying and finishing methods.

Compare this Machine with your present equipment. You will find that it requires less square feet of floor space per dozen than any existing method of finishing; less steam consumption — heating is direct; less power — a one-quarter horsepower motor operates the entire machine; less investment per dozen — reasonably priced; less upkeep — built to render years of service; and production possibilities with quality work that cannot be challenged.

Machines will pay for themselves in direct savings to you.

WRITE FOR DESCRIPTIVE BOOKLET

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**Paramount Textile Machinery Company**

*Main Sales Office*

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Clark drive. The program calls for expenditure of $21,500, representing $17,500 for the plant extension and $4,000 for the boiler house.

**Shirreffs Worsted Co.,** Fitchburg, Mass., sold its machinery at auction on March 19, and reported some unusually high prices. A group of looms only three years old sold at 80% of purchase price. A group of five-year-old looms sold for 75% of purchase price. The piece-meal auction realized nearly $100,000 against a bid for the entire mill of $75,000.

## Rayon & Silk Mill News

**Canadian Industries, Ltd.,** Montreal, Que., have let general contract for construction of $1,500,000 Nylon plant at Kingston to Anglin Norcross Ontario, Ltd., Toronto.

**Celanese Corp. of America,** New York, N. Y., has awarded general contract to George F. Hazelwood Co., Cumberland, Md., for large additions to plant near Pearisburg, Va.

**Albert Godde, Bedin Ltd.,** silk manufacturers, Iberville, Que., has gone into bankruptcy. Reason for the liquidation is ascribed to difficulties in obtaining raw silk supplies.

**Luray (Va.) Textile Corp.** opened its new plant Mar. 28 and commercial operations will soon begin.

**Oakdale Mfg. Corp.** is being chartered in Williamsport, Pa., to establish and operate a textile manufacturing business. Smallock & Mink, represent the firm.

**Owens-Corning Fiberglas Corp.,** Toledo, Ohio, has purchased a vacant plant in Ashton, R. I., from the Lonsdale Co., which will be made ready by June 1 to produce Fiberglas.

**Pioneer Parachute Co.,** Manchester, Conn., an affiliate of Cheney Bros., has increased its capacity from 50 parachutes weekly to 500 weekly during the last year.

**Quaker Pile Fabric Corp.,** Philadelphia, Pa., has arranged for the erection of a one-story mill on five-acre tract at Scranton, Pa., to be owned by local interests and occupied under long-term lease. Superstructure will be placed under way early in spring. Cost reported over $200,000, including equipment.

**Standard Ribbon Corp.,** Stroudsburg, Pa., has completed arrangements with Town Council at Milton, Fla., for proposed branch mill there.

**Tubize Chatillon Corp.,** New York, N. Y., in connection with its $1,400,000 expansion at Rome, Ga., has let contracts for certain machinery to Whitin Machine Works, Whitinsville, Mass. and to Max Ams Co., Bridgeport, Conn. Robert & Co., Inc., Atlanta, Ga., are architects and engineers.

**United Merchants & Manufacturers, Inc.,** has recently purchased the Seaboard Silk Mills property at Elberton, Ga. It is understood that new machinery will be installed and the company will operate under the name of Elberton Mills, Inc., making draperies and upholsteries.

## Knitting Mill News

**Abbeville (Ala.), Hosiery Mill** will not rebuild the mill destroyed by fire in November.

**Avon Knit Co., Ltd.,** Erie St., Stratford, Ont., closed for a number of years, has been purchased by Frederick Siberry, president of Roberston Knitting Mills Ltd., Toronto, who will operate under name of Avon Knit Co., Ltd., on knitted outwear. James Misener of Stratford is mill manager.

**Chipman Holton Knitting Co., Ltd.,** Hamilton, Ont., has its full-fashioned hosiery unit in operation. Equipment consists of 4 Kalio complete 45-gauge 28 section knitting machine.

**Cilley Hosiery Mills,** Newton, N. C., began operations late in March manufacturing men's half-hose in sports patterns.

**Dominion Knitting Co. Ltd.,** Joliette, Que., are converting a large building in that city into a new mill. Building measures 100 x 200 ft.

**Dolly Hosiery Mill,** Valdese, N. C., is constructing a new building, 30 x 70 ft. scheduled to be completed by June.

**Fairy Silk Mills,** Shillington, Pa. will install within the next few months six Collins high-speed warp-knitting (tricot) machines bought through Erick-Gross Corp., New York.

**Harnlet Hosiery Mills** may consolidate with the Dunn (N. C.) Hosiery Mills, Inc., according to the Dunn Chamber of Commerce. Both mills are now idle. They would have a combined production of 750 doz. pr. silk hosiery per month, at a lower cost than either mill would have separately, it is stated.

**Hildebran (N. C.) Hosiery Mill** is adding a finishing unit costing $10,000. F. E. Elliott, owner, states that the

# THE LONG VIEW ON SHORT-CUT REPAIRS

## *Take Costly Guesswork Out of Knitting Machine Maintenance*

With things humming the way they are these days, production certainly has to keep moving to keep pace with the trend. When a knitting machine part wears out or breaks down unexpectedly today, it becomes a moment for *quick* decision . . . and a *right* one. Patch-up or reliable repair? A local machine shop substitute or a genuine S & W factory-made duplicate?

Your local machine shop is neither skilled nor equipped to match the design, metallurgical, tooling or other considerations essential to turning out a serviceable replacement part equal to top performance you require of your Scott & Williams machines. Meanwhile, you are time out of pocket . . . time that probably would have been more than ample for a prompt factory shipment of the S & W part you need . . . a part that can be depended on to restore and maintain the efficiency in your Scott & Williams machines that your cost and production schedules demand. For the 55,400 different S & W parts replacements are identical to those assembled into complete knitting machines.

Replacement part orders receive right-of-way attention by the Scott & Williams factory staff. Teletype service is FREE from our High Point or New York offices.

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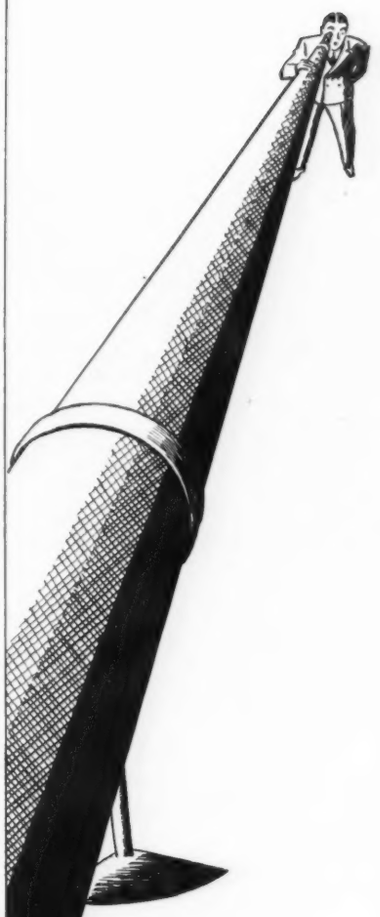

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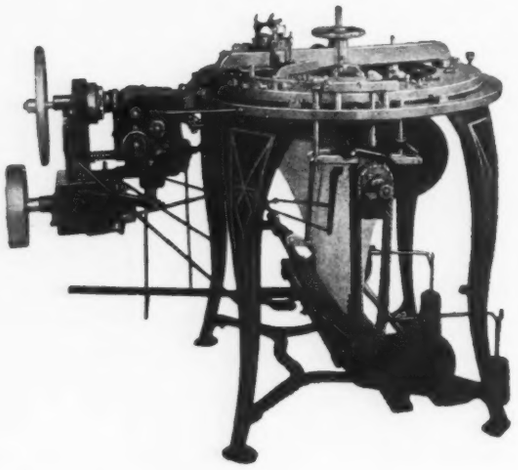
# LEIGHTON

# TRANSFER KNITTERS



In addition to our regular Panel Stitch Body machines we now offer a Seamless Sleeve Transfer Machine. Automatically Knit on cuffs. Three color stripe. Automatic taper attachment. Selvedge edge. No cutting, no seaming. Average 1-lb. per dozen—cost 1.00 per doz.

*Contact our representatives Show Week at Benjamin Franklin Hotel—Philadelphia.*

Est. 1873 Inc. 1894

## LEIGHTON MACHINE CO.

MANCHESTER, N. H.




new unit will be completed by the middle of May.

**Larkwood Silk Hosiery Mills, Inc.,** Charlotte, N. C., plan one-story addition, equipped as a boarding and pre-boarding room for Nylon hosiery. This department will be removed from present quarters in main mill, and vacated space given over to expansion in finishing division. Cost reported over $50,000, with equipment.

**Mercury Mills, Ltd.,** Hamilton, Ont., have installed a Reading 51-gauge, 30 section full-fashioned hosiery machine. This is the first 30 section 51-gauge unit to be installed in a Canadian mill.

**Monroe Full - Fashioned Hosiery Co.** property, Monroe, N. C., was sold at auction March 17 under direction of Smith Medlin, receeiver.

**National Silk Hosiery Mills,** Indianapolis, has completed addition of 15,000 sq. ft. floor space to be used as offices, a power house and for air-conditioning equipment.

**Ontario Hosiery Mfg. Co.,** have leased an entire floor at 630 King St., Toronto, Ont., doubling their manufacturing space.

**E. E. Paquette & Sons,** Woodstock, Ont., have erected a modern 48 x 48 ft., brick and steel addition. The firm also has a branch plant in Florida, in charge of Edgar E. Paquette.

**Perry Knitting Co.,** Perry, N. Y., plans construction of a 3-story brick and steel building to house modernized bleaching department. Plans provide for a structure 40 x 80 feet in size to have a capacity of 40,000 to 50,000 lb. of cloth a week.

**Pilot Full-Fashioned Hosiery Mill,** Valdese, N. C., plans an addition to its office. R. I. Clemer, Hickory, N. C., is architect.

**Waldensian Hosiery Mills,** Valdese, N. C., will construct a new office building, 62 x 45 ft., one story.

**Weissport** (Pa.) **Hosiery Mills** will start up soon as a cooperative. About 36 will be employed. D. V. Smith, formerly with Vertex Hosiery Mills, will be manager. Michael Bodnar is president, and Arthur Heinzelmoyer, vice-president.

**Western Knitting Mills, Ltd.,** Regina, Sask., lost all its stock and equipment in a recent fire in that city.

**F. K. Wilkins,** Greensboro, N. C. plans construction of a hosiery mill at 2210 High Point Road, Greensboro, to cost $12,000.

## Processing Plant News

**Bates & Innes Ltd.,** Carleton Place, Ont., is erecting a new dyehouse and boiler room with new steam and dyeing equipment. The boiler house is equipped with a Babcox-Wilcox & Goldie-McCulloch Ltd., water-tube boiler. The dyehouse has been equipped with a 500 lb. capacity Franklin stainless-steel raw-stock dyeing machine: also a Klauder-Weldon 1,000 lb. capacity dyeing machine.

**Brandon Corp.,** Renfrew Bleachery unit, Travelers Rest, S. C., has awarded contract for a 400 hp. boiler, stoker and bricksetting to Combustion Engineering Co., New York; automatic coal-handling equipment to Link-Belt Co., of Atlanta, Ga.; concrete stove silo to Neff & Fry Co., of Camden.

**Crystal Springs Bleachery, Inc.,** Chickamauga, Ga., has begun super-structure for one-story addition; general contract let to Batson-Cook Co., West Point, Ga.; cost close to $50,000, with equipment.

**Franklin Process Co.,** Providence, R. I., has begun one-story addition, 50 x 150 ft.; general contract let to A. C. Beals Co., Providence; for expansion in dye house, for dryer room and other departments; reported to cost over $80,000, including equipment.

**Hanes Dye & Finishing Co.,** Winston-Salem, N. C., will build two additions to its present plant, costing a total of $15,000.

**Marietta Hosiery Co.,** Hickory, N. C., a new hosiery finishing plant, opened for business the week of March 17.

**Ontario Dyeing Co.,** Philadelphia. Five employees have been given the opportunity of buying controlling stock in this company in the will of Albert Walker, president of the company who died recently.

**Proximity Mfg. Co.,** Greensboro, N. C., has installed latest package-dyeing machinery, automatically controlled and latest extracting and drying equipment.

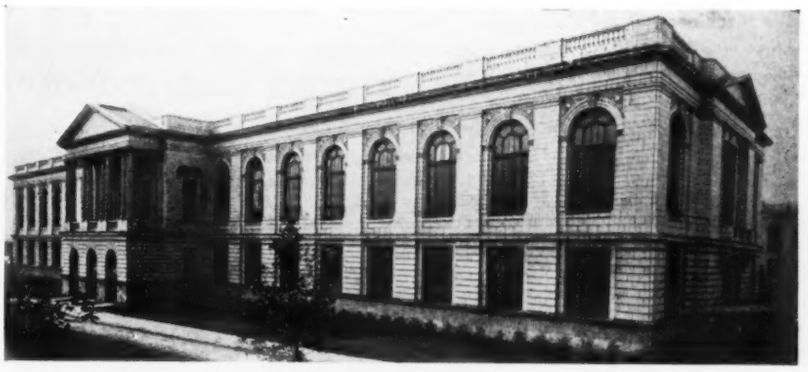
**Riverview Finishing Co.,** Paterson, N. J., lately organized, has taken over former mill of Expert Piece Dyeing & Finishing Co., First Ave.

**Union Bleachery,** Greenville, S. C., has awarded contracts including one 500 hp. boiler to Babcock & Wilcox; multiple retort stoker to American Engineering Co.; boiler bricksetting to Fisher-Halliday Co.; two smoke stacks with built-in induced draft fans to Prat-Daniel Co.; J. E. Sirrine & Co. are the engineers.

# Textile World's GUIDE TO EXHIBITS

at the

Knitting Arts Exhibition



COMMERCIAL MUSEUM, PHILADELPHIA,

APRIL 21-24, 1941

# Textile World's Guide to KNITTING ARTS EXHIBITION

**DETAILED DESCRIPTIONS** of the exhibits at the 37th Annual Knitting Arts Exhibition, Philadelphia, Pa., April 21–24, 1941, are given on this and following pages:

**Abbott Machine Co.,** Wilton, N. H. Booth 175. Winders with knitting-cone package heads which will demonstrate the type of knitting-cone packages produced by Abbott equipment. Rep.: E. J. Abbott, R. W. Smith, R. E. Hopkins, L. S. Ligon.

**Aberfoyle Mfg. Co.,** Philadelphia. Booths 307-308, 321-322, 332-333. Cotton yarns, Nylon seaming and looping yarn, and combination yarn comprising mercerized cotton twisted with Nylon. Rep.: W. T. Galey, Jr., L. A. Stead, W. T. Cheatham, N. L. Hill, H M. Detwiler, J. P. Holt, J. F. McCrudden, W. C. Brown, R. W. Yeabsley, E. J. Neal, J. J. Neil, J. S. Kenrick, F. W. Hancock, William Galey, F. G. Miller, Wm. A. P. MacKnight, G. W. Herrick, Jr., C. D. Gott, W. H. Crenshaw, J. A. Holt, E. F. Golden, F. H. Etherington.

**Adelphia Textile Co.,** Philadelphia. Booth 376. Resist-dyed decorative yarns and seaming and looping threads, including Nylon. Rep.: James T. Hunter, Robert A. Hunter, Edw. B. Steinmetz, Clarence Evans.

**Ainslie Knitting Machine Co., Inc.,** Brooklyn, N. Y. Booth 212. Knitting machinery and knit-goods finishing equipment, including new finishing machine for brushing, napping, pile-raising, and sueding. Rep.: Sampson Broadwin, Leopold Broadwin.

**Allentown Bobbin Works, Inc.,** Allentown, Pa. Booth 250. Silk and rayon bobbins and spools; also Vibrometer in actual operation, testing vibration and balance of bobbins running at high speed. Rep.: Henry W. Mack, Harold S. Barnes.

**Aluminum Co. of America,** Pittsburgh, Pa. Booths 427-428. Aluminum parts for textile machinery. Rep.: C. Braglio.

**Amalgamated Chemical Corp.,** Philadelphia. Booths 23-24. Hosiery finishing, dyeing, and penetrating agents; water repellents; other textile finishes. Rep.: Harold B. Dohner, Robert A. Bruce, Francis T. Quinlan, John T. McGrogan.

**American Bemberg Corp.,** New York. Booths 279-280, 289-290. Rayon yarns. Rep.: E. H. Benzing, H. A. Chapell, J. R. Dunlap, Jr., K. Herrmann, T. H. Johnson, C. K. Seid, Th. Wood.

**American Enka Corp.,** New York. Booths 379-380, 401-402. Rayon yarn. Rep.: Claude L. Hayden, E. W. Martin, Ralph Faison.

**American Magnesium Corp.,** Pittsburgh, Pa. Booths 427-428. Light-weight magnesium parts for knitting and other textile machines. Rep.: H. Menking.

**American Safety Table Co., Inc.,** Reading, Pa. Booths 305-306, 323-324, 330-331, 348-349, 360-361, 386-387. Tables, individual motor drives, individual stands, collar and cuff turning and pressing machines. Rep.: Max T. Voigt, Ben Greenawalt, Henry Frankel, A. L. Alexander, J. Dashew, E. W. Hollister, John Fite, Jack Ginsberg.

**American Viscose Corp.,** Wilmington, Del. Booths 309-310, 319-320. Rayon yarns and fabrics. Rep.: M. H. Morse, J. Wiggins, J. P. Mervine; also representatives from branch offices and sales development department.

**American Vitos Co., Inc.,** New York. Booth 355. Hosiery mending equipment. Rep.: A. de St. Maurice.

**American Wool & Cotton Reporter,** Boston. Booth 9. Textile publishers.

**American Yarn & Processing Co.,** Mt. Holly, N. C. Booths 388-389, 394-395. Mercerized cotton yarn. Rep.: Edwin Hutchison, T. H. McKinney, E. F. Redding, Charles Lowe, E. J. Holbrook, E. W. Wood, and others.

**Edw. R. Ammon, Inc.,** Reading, Pa. Booth 37. Hosiery inspecting equipment, featuring increased production through added automatic devices and greater protection against Nylon snagging. Rep.: Edward R. Ammon.

**Joseph Amon, Inc.,** Rahway, N. J. Booth 282. Hosiery-mill equipment and accessories, including snarl eliminators for crepe de chine knitting, and stainless-steel tension rings. Rep.: Joseph Amon, Alexander Amon, Anton Amon, R. H. Therrell, L. F. Ott.

**Amsco Packaging Machinery, Inc.,** Long Island City, N. Y. Booth 384. Machinery for packaging textile products in cellophane or other materials, new automatic bag maker, machine for speeding up hand wrapping of packages, and high-speed rotary bag sealer. Rep.: Edwin E. Messmer, F. Paul Czifra, S. R. Watson, L. J. Smith, E. H. Watson.

**Arrow Needle Co.,** Manchester, N. H. Booth 11. Latch knitting needles. Rep.: Jack Forstadt, Donald A. McDonnell, George L. Heaton, Jr.

## KNITTING WEEK PROGRAM

**The 37th Annual Knitting Arts Exhibition will open Monday, April 21, in the Commercial Museum, Philadelphia. It will continue through Thursday, April 24. Associated events include:**

**National Association of Hosiery Manufacturers, annual meeting, 2 p.m., Wednesday, April 23; labeling, wages, defense program will be discussed; directors will be elected. Underwear Institute, annual meeting, 9:30 a.m. Thursday, April 24; followed by luncheon at which Brig. Gen. W. A. McCain, Q.M.C., will speak.**

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**TEXTILE WORLD will maintain headquarters in booths 114—117 at the Knitting Arts Exhibition. Cordial invitation is extended to visitors to make this booth their business headquarters while in Philadelphia.**

**Atlantic Rayon Corp.,** Providence, R. I. Booths 252-253. Dyed and thrown rayon yarns, and fabrics made therefrom. Rep.: T. L. Power, L. R. Buckner, C. B. Burns, R. Lyons, C. W. Bellows.

**Atwood Machine Co.,** Stonington, Conn. Booth 338. Throwing machinery. Rep.: H. M. Bailey, John R. Breen.

**Benjamin Electric Co.,** Des Plaines, Ill. Booths 421, 423. Latest developments in fluorescent lighting and lighting equipment.

**Boger & Crawford,** Philadelphia. Booths 273-274, 295-296. Combed cotton and mercerized yarns. Rep.: Ernest T. Boger, Alfred H. J. Boger, Harry H. Haff, John J. Nevins, Thomas F. Haigh, C. Richard Beck, W. C. Henderson.

**Boshamer & Co.,** Philadelphia. Booth 40. Cotton yarn. John Kenworthy, R. D. McDonald, Howard Nekevis, Harry Graeff, Abe Besser, James R. Moore, Henry Boshamer, L. R. Wilson, Cary C. Boshamer.

**B. H. Bunn Co.,** Chicago. Package-tying machines, in a new manual cross-tie model, and also single-wrap machines. Rep.: J. L. Williams, W. W. Spencer.

**H. W. Butterworth & Sons Co.,** Philadelphia. Booths 65–66. Dyeing and finishing machinery. Rep.: Harry W. Butterworth, Jr., DeHaven Butterworth, J. Ebert Butterworth, John H. S. Spencer, W. E. H. Bell, Wm. F. Hennessy.

**Cannon Mills, Inc.,** New York. Booths 390–391. Cotton yarns. Rep.: H. E. Aken, C. F. Peffer, C. V. Albright, H. Crumbliss, M. B. Foil, J. C. Bartlett, W. Helriegel, P. H. Dalglish, G. Williams, A. Bone.

**Caron Spinning Co.,** Rochelle, Ill. Booth 435. Yarns. Rep.: W. H. Stocking, J. Blackwood Cameron, J. Lewis Cecco, Frank Durr.

**Celanese Corp. of America,** New York. Booths 275–276, 293–294. Rayon yarns and fabrics. Rep.: George Kohn, K. C. Laughlin, John P. Holmes.

**China Grove Cotton Mills Co.,** China Grove, N. C. Booths 195–196, 221–222. Mercerized yarns and knitted fabrics. Rep.: C. J. Beaver, W. C. Ward, and others.

**Coleman & Co.,** New York. Booth 383. Factors. Rep.: Albert Witz.

**Charles Cooper Co., Inc.,** Bennington, Vt. Booth 365. Spring-beard and latch needles for knitting machines; also knitted fabrics. Rep.: John J. Hayes, Raymond Rogers.

**Cotton,** Atlanta, Ga. Booth 83. Textile publishers.

**Cotton Yarns, Inc.,** New York. Booths 392–393. Mercerized yarn produced by new process; package-dyed yarns; single and ply combed and carded yarns—natural and dyed; thread. Rep.: Robert Goldberg, Gerald Cooper, H. A. James, N. Zank, R. Stern, Weldin B. Longgley, George O'Neil, Stewart McConaghy, Clarence H. Ruth.

**Cross Cotton Mills Co.,** Marion, N. C.

Booths 199–200. Double carded and combed knitting yarn on cones, in pastel shades. Rep.: I. I. Davis, S. R. Cross, Frank Goldsmith, Oliver Cross.

**J. D. Cunningham,** Philadelphia. Booth 36. Carded and combed cotton yarns. Rep.: J. D. Cunningham, Helen M. Malyszka, George W. Stowe, R. S. Ferguson.

**Currier & Co., Inc.,** New York. Booth 353. Combed and carded cotton yarns, spun-rayon yarns, and fabrics made from same. Rep.: S. B. Terry, S. E. Fulton, J. Bruce McCullough, Bruce C. Weber, F. W. Sundberg.

**Davison Publishing Co.,** Ridgewood, N. J. Booths 169–170. Textile publishers.

**Dennison Mfg. Co.,** Framingham, Mass. Booth 442. Labels, tickets, and marking machines, to aid mills in complying with the provisions of the Wool Labeling Act.

**Diehl Mfg. Co.,** Elizabethport, N. J. Booths 226–229AA, 262–265. Standard and special textile motors. Rep.: P. N. Thorpe, H. B. Thorpe, J. S. Wood.

**Dixie Mercerizing Co.,** Chattanooga, Tenn. Booths 245–248. Knitting yarns. Rep.: George R. West, Jr., J. B. Frierson, Jr., A. K. Johnson, E. R. Kimball, D. O. Blevins, S. L. Diggle, Fred Lemmond, Fred. W. Frank, J. Blackwood Cameron, Alexander Cameron, T. J. Tighe, George A. Dalglish, C. N. Ackroyd.

**Duffy Silk Co.,** Buffalo, N. Y. Booths 396–397. Thrown silk. Rep.: Charles G. Duffy, Jr., Paul Hemmerich, C. Walter Seidel, Carl A. Lorenz.

**Duplan Silk Corp.,** New York. Booths 51–52. Commission throwing. Rep.: George Friedlander, Wm. S. Wheeler, Jr., H. H. Cannon, R. H. Griffith, G. E. Ward, D. L. Ryan.

**E. I. du Pont de Nemours & Co., Rayon Division,** New York. Booths 230–231, 260–261. Rayon yarns. Rep.: F. B. Draper, J. W. Tinker, J. B. Tuthill, D. B. Hardin.

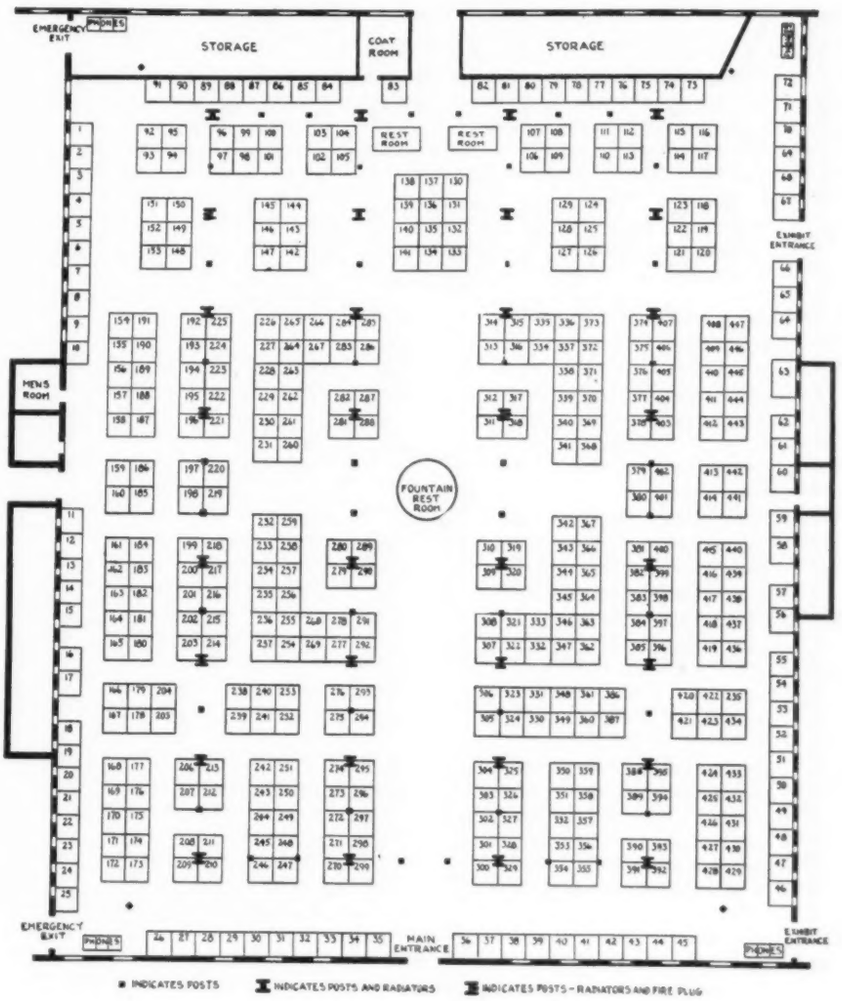
**John A. Eberly,** Reading, Pa. Booths 204–205. See Franklin Needle Co.

**Empire State, Inc.,** New York. Booth 46. Sales and executive office space, and showrooms. Rep.: Clarence Rothwell, Joseph Kirby, Hamilton Weber.

**Ewing-Thomas Corp.,** Chester, Pa. Booths 38–39. Mercerized cotton yarns, thrown silk. Rep.: James L. Rankin, Harold E. Aken, Henry A. Stafford, Joseph B. Pope, George W. Fiss, David Thomas, William J. Crummer, George E. White, Jacob F. Meschter, J. C. Bartlett, Preston H. Dalglish, C. V. Albright, Henry Crumbliss, Martin B. Foil, Charles F. Peffer, Arthur Bone.

**Fairchild Publications,** New York. Booths 80–82. Textile publishers.

**W. F. Fancourt & Co.,** Philadelphia. Booth 249. Low pH degumming agent combining penetrators and emulsifiers; special finish developed for crepe de chine hosiery, line of products for delustering, etc.; hosiery finished with these products. Rep.: W. F. Fancourt, Jr., W. F. Fancourt, 3rd, Howard A. Virkler, Charles T. Harvey, Claude G. Wolff.




Floor plan for Knitting Arts Exhibition

**Ernest A. Feustel, Inc.,** Hasbrouck Heights, N. J. Booth 206. Removable thread carriers for full-fashioned knitting machines. Rep.: Raymond Feustel, Maurice J. Nolan.

**Filatex Corp.,** New York. Booth 7. Covered latex elastic yarn. Rep.: E. F. James, H. B. Ketchum, H. W. Kettlety, R. F. Jessen, R. A. Gift, Jr., G. E. Ward, R. H. Styles, A. H. Alterman, H. C. Simpson, H. F. Stolzenberg.

**J. A. Firsching & Son,** Utica, N. Y. Booth 359. Cloth-cutting equipment. Rep.: Bob Firsching, J. A. Firsching.

**J. B. Ford Sales Co.,** Wyandotte, Mich. Booth 352. Alkali products for use in textile processing. Rep.: W. B. Davison, H. E. Moyer, J. W. Turner, W. B. Appleby.

**Foster Machine Co.,** Westfield, Mass. Booths 346–347, 362–363. Nylon sizing and coning machines, Model 102 cone and tube winder. Rep.: Webb Durham, H. E. Swift, H. A. Cadle, A. M. Atwater, D. W. Bridgman.

**Franklin Needle Co.,** Franklin, N. H. Booths 204–205. Line of products for knitting mills, including knitting and sewing-machine needles; jacks, sinkers, points, porcelains, scissors, and other specialties.

**Franklin Process Co.,** Philadelphia. Booths 424–425. Dyed yarns and fabrics containing yarns dyed by this company. Rep.: Sales representatives from Philadelphia, Providence, R. I., Greenville, S. C. and Chattanooga, Tenn. offices.

**Friedberger & Aaron Mfg. Co.,** Philadelphia. Booth 21. Elastics, edging, and braids for underwear and hosiery. Rep.: Guy C. Tanner, Joe Stone, J. W. Brown, Joseph Speitel, George Miller, Bill Barnhardt, John Decker.

**Gastonia Combed Yarn Co.,** Gastonia, N. C. Booths 392–393. Combined exhibit for Cotton Yarns, Inc., which see.

**General Hosiery Motor Mend Corp.,** New York. Booth 244. Electric hosiery repairing machines operating on gray

and finished women's silk and Nylon hosiery. Rep.: Chas. E. Mandelick.

**Globe Dye Works Co.,** Philadelphia. Booth 63. Dyed cotton, mercerized cotton, and rayon yarns. Rep.: Horace T. Greenwood, Jr., Paul Greenwood, George T. Moore, William Goodis, Fred V. Traut, William A. Hilbert, W. J. Henne.

**Grand Rapids Textile Machinery Co.,** Grand Rapids, Mich. Booths 159–160, 185–186. Machine for steaming, spreading, and folding tubular-knit fabrics; new inspecting machine for viewing both faces of such fabrics simultaneously; new dryer for these fabrics. Rep.: W. H. Shields, W. F. Moon.

**Grove Silk Co.,** Scranton, Pa. Booths 12–13. Thrown silk. Rep.: George J. Schautz, W. L. Schautz, A. G. Schautz, George J. Schautz, Jr., W. T. Cheatham, Clarence Asay.

**Gulf Oil Corp.,** Philadelphia. Booth 43. Petroleum products. Rep.: J. Marshall, Jr., A. E. Townsend.

**Gunze Silk Corp.,** New York. Booth 60. Raw silk. Rep.: Bert Berenson.

**Hampton Co.,** Easthampton, Mass. Booths 238–241. Cotton and rayon yarns. Rep.: J. S. Blodgett, R. B. King, A. B. Rogers, R. A. Bliss, C. W. Causey, Jr., F. B. Handy, Walter T. Forbes, Wm. P. McCulloch, F. W. Kingsley, B. H. Rehbaum, B. J. Miller, H. A. Florsheim.

**Oscar Heineman Corp.,** Chicago. Booths 344–345. Raw and thrown silk and commission throwing. Rep.: J. H. Brine, C. D. Gott, N. P. Murphy, W. J. Bieberle, D. G. Brewster, J. C. Lavey, F. E. Morey.

**Hellwig Silk Dyeing Co.,** Philadelphia. Booth 281. Samples of direct and resist-dyed, weighted and pure dye silk yarn; rayon and novelty yarns; hosiery, neckties, sweaters, piece goods, and other articles made from above yarns. Rep.: R. M. Gutekunst, G. A. Smith.

**John W. Hepworth & Co.,** Philadelphia. Booth 225. Looping machines. Rep.: George Keyser, Jacob J. Sander.

**Herst Sales Corp.,** New York. Booth 50. New and improved machines for cutting and folding woven or printed labels, and for cutting and fusing to garments labels with film already applied. Rep.: Messrs. Oskow, Reis, Weinberg.

**Hoffner Rayon Co.,** Philadelphia. Booths 223–224. Resist yarns and hosiery knitted from same; rayon, natural and converted, on every type of package. Rep.: John G. Hoffner, Frank M. Shannonhouse, Jr., W. J. Henne, J. P. Hoffner, Sr., J. C. Hoffner, Jr., L. Oechslin.

**Alfred Hofmann, Inc.,** West New York, N. J. Booths 342-343, 366-367. Hosiery knitting equipment. Rep.: Alfred Hofmann, Carl E. Weinberg, Peter Schoenster, C. A. Hepp, Hanns Wirth.

**Hooker & Sanders, Inc.,** New York. Booth 429. Cotton yarns. Rep.: R. J. Hooker, J. P. Sanders, B. M. Harrington, W. F. Durkin, F. K. Goldey, M. E. Roper, F. L. Brayton, R. B. MacKnight, G. M. Brinn, W. A. Popp, J. L. Grey, Sr., J. L. Gray, Jr.

**Hosiery Patents, Inc.,** Lansdale, Pa. Booth 158. Flexy carriers and spring tubes for use with Nylon yarn; fiber verge plates for all types of full-fashioned knitting machines. Rep.: James DeStephen, Frank Weisbecker, Benj. Subin.

**Howes Publishing Co.,** New York. Booths 156–157, 188–189. Textile publishers.

**Hyde Rakestraw Co.,** Philadelphia. Booth 441. Cotton yarn. Rep.: C. S. Clark, J. L. Rakestraw, D. E. Colehower, Albert Wiessler, Frank Torchiana, W. J. Flesh.

**Hygrade Sylvania Corp.,** Salem, Mass. Booths 234–235. Complete fluorescent lighting units, fluorescent and incandescent lamps, starters and lampholders. Rep.: A. Hopkin, Jr.,, R. B. Delany, B. C. White, F. Archer, C. G. Pyle.

**Industrial Dryer Corp.,** Stamford, Conn. Booths 14–15. Latest type conditioning and twist-setting equipment, featuring complete automatic control. Rep.: C. M. Kitzmiller, H. B. Foulder, F. W. Caesar, G. D. Millspaugh, I. E. Norvig, J. R. Tutt.

**Industrial Tape Corp.,** New Brunswick, N. J. Booth 45. Transparent cellophane tape. Rep.: Irving Lupolov, Herbert Z. Kane.

**International Nickel Co., Inc.,** New York. Booths 16–17. Mill and fabricated forms of Monel for textile wet-processing equipment. Rep.: C. J. Bianowicz, E. A. Turner.

**International Salt Co., Inc.,** Scranton, Pa. Booths 161–162. Equipment for automatic dissolution of rock salt into clean saturated brine, without use of agitation. Rep.: A. J. Hulsebasch.

**Loyal T. Ives Co.,** New Brunswick, N. J. Booths 192–193. Spring-beard needles, sinkers, jacks, and other special parts for knitting machines. Rep.: Theodore Whitlock, Everett A. Quint, Harry W. Thomas, William W. Heath, Raymond Bergen, Theodore Whitlock, Jr.

**Johnston Mills Co.,** Charlotte, N. C. Booths 287–288. Combed and carded yarns; Durene yarn. Rep.: R. H. Johnston, J. S. Wilcox, Donald R. Jonas, William J. Yates, R. M. Bechtel, F. N. Belk, William B. Phelps, Jr., J. W. Ferguson.

**Jordan Mills, Inc.,** Columbus, Ga. Booth 357. Colored cotton yarns. Rep.: R. Curtis Jordan, Jr.

**Kahn & Feldman, Inc.,** New York. Booths 214–215. Thrown silk. Rep.: J. O'Donoghue, Ralph Adams, G. N. Frank, N. Lewis, J. Kahn.

**Samuel Kassow Co.,** Philadelphia. Booth 434. Thrown hosiery yarns. Rep.: Samuel Kassow, Peter P. McEvoy, Clarence Krapf, Jack Kassow.

**Kaumagraph Co.,** New York. Booths 102–105. Latest developments in identification and packaging, conforming to legal demands of Wool Labeling Act and Federal Trade Commission Rules. Rep.: Trowbridge Marston, and representatives from various sales offices.

**A. Kimball Co.,** New York. Booth 180. Ticket marking machines and methods for hosiery and yarn manufacturers, and for compliance with Wool Labeling Act. Rep.: L. J. Waters, T. R. Spencer, Frank Brady, J. Brooks, Gordon Cunningham.

**Joseph Klumpp Co.,** Philadelphia. Booth 426. Cotton yarns and their products. Rep.: Charles B. Rapp, G. L. Maveety, W. D. Brenckman, Thomas Park, J. J. Klumpp.

**Knit Goods Weekly,** New York. Booths 156–157, 188–189. Textile publishers.

**Laconia Needle Co.,** Laconia, N. H. Booth 216. Latch needles in screw-rivet and rivetless types. Rep.: Archie B. Sanborn, Hobart D. Sanborn, Charles B. Paulus, Walter H. Groat.

**W. T. Lane & Bros., Inc.,** Poughkeepsie, N. Y. Booth 354. Canvas baskets, hampers, trucks, and doff boxes. Rep.: R. T. Lane, J. M. Baker.

**R. K. Laros Silk Co.,** Bethlehem, Pa. Booths 58–59. Commission throwsters. Rep.: R. K. Laros, G. A. Fenton, S. F. Burtis, J. L. Gross, P. Wilson.

**Laurel Soap Mfg. Co.,** Philadelphia. Booths 210–211. Line of soaps, oils, and finishes for hosiery and knit goods; samples of yarns, hosiery, and fabrics treated with these products. Rep.: Clarence E. Bertolet, Wm. H. Bertolet, Jr., A. Henry Gaede, C. C. Hagelgans, E. W. Seasongood, W. R. Sargent.

**Leatex Chemical Co.,** Philadelphia. Booths 42–43. Chemical specialties for the textile industry. Rep.: John McChesney, John F. Rieder, Maurice M. Guertin, Robert R. Willgoos, C. L. Hammell, H. Higginbotham, Harry Buckley, Louis A. Gregg, Claude I. Ruth, Louis Soistmann.

**Percy A. Legge,** Philadelphia. Booth 213. Woolen yarns, Bradford-spun worsted and mohair yarns, French-spun worsted, Vigourex, merino, and specialty blend yarns of rayon, cashmere, angora, etc.; Controlastic yarn. Rep.: C. W. Neeld, Jr.

**Lestershire Spool & Mfg. Co.,** Johnson City, N. Y. Booth 209. Rayon and Nylon spinning, twisting, and other types of bobbins made from magnesium alloy. Rep.: W. S. Taylor, H. D. Clinton.

**Karl Lieberknecht, Inc.,** Reading, Pa. Booths 232–233, 258–259. Full-fashioned hosiery-knitting machinery, including new 32-section machine. Rep.: Albert Friedmann, Ernest Feustel, Erwin Ruckel, H. W. Fricke, Rudolph Thierfelder.

**Markem Machine Co.,** Keene, N. H. Booths 311–312. Line of box, label, and fabric printing machines, including new machine with production of 400 labels per hour. Rep.: C. A. Putnam, Carl E. Putnam, Harold D. Milton, Otto B. Meyers, Charles H. Cheeseman, David F. Putnam.

**C. R. McGinnes,** Reading, Pa. Booth 356. Combed yarns spun by Ruby Cotton Mills, Inc.; carded yarns spun by Ranlo Mfg. Co.; merino yarns spun by Ingram Spinning Co., Inc.; mercerized yarns produced by Green River Mills, Inc. Rep.: C. R. McGinnes, T. L. Wilson, Ernest Jones.

**Merrow Machine Co.,** Hartford, Conn. Booths 377–378, 403. Machines for trimming, overseaming, hemming, and overedging knitted underwear and outerwear; also plain crochet and shell-stitch machines.

**Clarence L. Meyers & Co.,** Philadelphia. Booths 340–341, 368–369. Cotton yarns. Rep.: Clarence L. Meyers, Milton M. Meyers, G. C. Ballenberg, Charles E. Bender, Ernest W. Fowler, Louis Eschelbach, Harry W. Schrader, Daniel Strauss, Alfred G. Symonds, Harry J. Riebe, George E. Maurer.

**Miller Co.,** Meriden, Conn. Booth 166. New continuous fluorescent lighting system; also other fluorescent lighting fixtures. Rep.: L. M. Grawemeyer, E. S. Coe.

**Milprint, Inc.,** Milwaukee, Wis. Booth 437. Cellophane packaging for hosiery and other textile products. Rep.: Messrs. Rosen, Nast, Presser, C. Hart, L. Hart, Luckman, Steelman, Schissler, Milne, Burke.

**L. P. Muller & Co.,** Philadelphia. Booths 317–318. Cotton yarns and garments made from same. Rep.: H. D. Muller, H. G. Harper, J. L. Muller, W. J. Scott, H. R. Penington, E. O. Penington, T. C. Brown, J. T. Miller, W. R. Biggs.

**National Association of Hosiery Mfrs.,** New York. Booths 73–75. Headquarters. Display of Association activities and services. Rep.: Earl Constantine, Reuben C. Ball.

**National Association of Hosiery Mfrs., (Research Department)** New York. Booths 415–417, 438–440. N.A.H.M. snag-resistance tester; exhibit of research problems, studies and activities. Rep.: E. Max Schenke, Howard E. Shearer.

**National Bundle Tyer Co.,** Blissfield, Mich. Booth 430. Single- and double-tie machines for tying socks, wash cloths, towels, underwear, overalls, etc., with either cotton twine or knitted braid. Rep.: Charles Reitzes, John E. Fox, Palmer Saxton.

**National Carbon Co., Inc., Carbon Sales Div.,** Cleveland. Booth 49. New carbon arc accelerated testing unit for dyestuffs, dyed fabrics, and similar products; tank linings and miscellaneous group of pipe, fittings, and valves utilizing corrosion-resistant, heat transfer, and other properties of carbon graphite and Karbate products. Rep.: M. J. Dorcas, F. Hohmeister, S. Mattison, C. G. Ollinger, H. D. Van Artsdale.

**National Spinning Co.,** Brooklyn, N. Y. Booth 201. Cotton and worsted yarns. Rep.: L. C. Kinsey.

**North American Rayon Corp.,** New York. Booths 110–113. Rayon yarns in circular-knit fabrics and brushed knit cloth. Rep.: J. D. Hallaren, R. C. Urban, E. E. Steidler, M. R. Collier, F. Oettinger.

**Onyx Oil & Chemical Co.,** Jersey City, N. J. Booths 217–218. Line of new hosiery finishes for use with natural and synthetic fibers; new finishes for crepe de chine hosiery. Rep.: A. C. Mackey, H. H. Mosher, A. R. Jenny, Charles E. Maher, E. W. Klumph, Cliff Myers, Cliff Smith, J. W. Huber, R. A. Watson, John Tresize, William Tresize, Albert Brandt, Charles E. Ehrengart, Leon P. Brick.

**Pairpont Corp.,** New Bedford, Mass. Booth 339. Paper cones and tubes. Rep.: P. I. Fletcher, R. A. Carroll, C. N. Ricketson.

**Paramount Textile Machinery Co.,** Chicago. Booths 266–267, 283–284, 285–286. Hosiery finishing machinery. Rep.: Henry Pope, Sr., L. H. Oswald, L. S. Kleinfeld, John C. Fenley, O. A. Siegel, W. H. Albertson, W. L. Coggins, W. E. Pike.

**Patent Button Co.,** Waterbury, Conn. Booth 398. Washproof compression-molded buttons for underwear and sportswear. Rep.: Thayer Baldwin, Franklin Read, Harry E. Richardson.

**Geo. B. Pfingst, Inc.,** Philadelphia. Booths 370–371. New crepe yarns; also compensated- and high-twist yarns for hosiery. Rep.: Geo. B. Pfingst, Bart Pfingst, Jay J. Jacobs, J. P. Reynolds, A. W. Bachman, Carl Wagner.

**Philadelphia Metal Drying Form Co.,** Philadelphia. Booth 105AA. Improved hosiery-finishing equipment, including new models of forms on which several styles and sizes of hosiery can be shaped on one board. Rep.: Joseph Seligman, Richard Guggenheim, Paul Guggenheim.

**Proctor & Schwartz, Inc.,** Philadelphia. Booths 268–269, 277–278, 291–292. New single-operator automatic boarding, drying, stripping, piling, and counting machine for hosiery; single-operator preboarding machine for Nylon hosiery. Rep.: C. T. Griffith, Charles Tiers, William Merrigan, Thomas Schermerhorn.

**Quaker Chemical Products Corp.,** Conshohocken, Pa. Booths 418–419. New detergent, penetrating, boil-off, degumming, scrooping, water-repellent, and sizing compounds; synthetic-resin and other finishes for rayon and cotton knitted and woven goods; line of finishes for silk and Nylon hosiery; stock lubricants for all fibers. Rep.: Emil Niessen, H. N. Kopple, R. Zametkin, D. E. Finkel, J. W. Brown, D. B. Priestley, R. W. Kenyon, D. J. Benoliel, L. O. Benoliel, F. Batchelor.

**Rayon Publishing Corp.,** New York. Booths 89–90. Textile publishers.

**Reece Button Hole Machine Co.,** Boston. Booths 381–382. Cord-trimming machine, adjustable fly-bar machine, and rapid eyelet machine. Rep.: F. A. Reece, Jr., J. H. Pikul, F. O. Paul, and others.

**Robert Reiner, Inc.,** Weehawken, N. J. Booths 411–412, 443–444. New high-speed warping and beaming equipment, automatic heeler, knitting looms, new counterbalanced high-speed creel tension and creels. Rep.: Robert Reiner, Fritz Lambach, Paul Sullivan, Ferdinand Loeffler, August Schoenenberg.

**Chas. Reitzes,** Philadelphia. Booth 430. Equipment for tying all kinds of boxes, bundles, and packages. Rep.: Chas. Reitzes, H. L. Reitzes, Joe Block, Palmer Saxton.

**Reliance Electric & Engineering Co.,** Cleveland. Booths 432–433. New N.E.M.A. standard a.c. motor; variable-speed drive, and its application to the knitting industry. Rep.: E. E. Helm, W. K. Schlotterbeck, J. W. Eakins.

**Royersford Needle Works, Inc.,** Royersford, Pa. Booths 399–400. Bent loose coarser for loose coarsing Nylon hosiery; also spring-beard needles, chains, carrier tubes, straps, knocking-over bits, jacks, sinkers, etc. Rep.: Ferdinand Heller, Fred Heller, R. W. Breidenbach, Charles Bortz.

**San-Knit-ary Textile Mills,** Philadelphia. Booth 44A. Newly developed bags and nets for dyeing Nylon hosiery; also dye nets for silk hosiery, and silk soaking bags. Rep.: Paul D. Dalsimer.

**Sauquoit Silk Mfg. Co., Inc.,** New York. Booth 436. Silk hosiery yarns. Rep.: T. Cowan, A. Gavaghan, B. Griffin.

**Scholler Bros., Inc.,** Philadelphia. Booths 270–272, 297–299. Combination dull, repellent finishes for silk, rayon, Nylon, etc., hosiery; new finish for crepe de chine hosiery; textile soaps, softeners, sulphonated oils, and fabrics treated with same. Rep.: L. M. Boyd, W. A. Daniel, E. S. Atkinson, J. F. Noble, F. C. Scholler, J. Sweitzer.

**Sees & Faber Co., Inc.,** Philadelphia. Booths 17–19. Coarsing pad and bones for Nylon; other full-fashioned hosiery mill supplies. Rep.: R. W. Sees, H. Schwarz, J. Dietrick, A. Beetle, C. Rudderow, E. Raichle, F. Buckley.

**Shell Oil Co.,** New York. Booths 413–414. Needle oil and other lubricants; naphthas, solvents, fuels, and complete line of petroleum products for textile industry. Rep.: E. G. Richardson, F. W. Spooner, E. H. Turnau, C. B. Huntoon, M. Gleason, L. Catling, J. Trexler.

**Singer Sewing Machine Co.,** New York. Booths 226–229, 229AA, 262AA, 262–265. New high-speed automatic hosiery seamer, and line of sewing machines for a variety of uses. Rep.: J. P. Baiter, H. C. Morehouse, P. R. Mohney, L. D. Peak, C. A. Stevens, J. C. Lewis, C. S. Womack, F. F. Reineke, R. Moutaw, K. Hacklander, G. Gardner.

**Smith, Drum & Co.,** Philadelphia. Booths 29–32. Hosiery, skein, and package dyeing equipment. Rep.: James MacDougall, Joe Ballentine, Perry Parrott, William Dodson, Harry Drum.

**Sonoco Products Co.,** Hartsville, S. C.

Booths 96–99. Line of paper cones, tubes, spools and cores; also roving cans, cork cots, Koroseal cots, and underclearer rolls. Rep.: W. B. Broadbent, W. A. Biggs, J. W. Hillsgrove, J. A. Durkin, T. B. Chambers, E. J. Cotter, H. P. Lamarche.

**Southern Knitter,** Charlotte, N. C. Booths 77–78. Textile publishers.

**Southern Mercerizing Co.,** Tryon, N. C. Combined exhibit with China Grove Cotton Mills Co., which see.

**Southern Textile Machinery Co.,** Paducah, Ky. Booths 374–375, 406–407. Loopers and looper equipment, including means for removing half stitches after trimming coarse-gage work. Rep.: T. A. Paxton, R. N. Parkin, Charles Holcomb.

**Spaulding Fibre Co.,** Camden, N. J. Booth 6. Fiber bobbins for winding Nylon. Also fiber sheets, rods, tubes, and fabricated parts. Rep.: A. L. Wright, W. C. Hyde, C. F. Cary.

**Standard-Coosa-Thatcher Co.,** Philadelphia. Booths 197–198, 219–220. Line of cotton yarns, including standard Durene, combed Peelers, Saks, Preemo,, Selo, and threads; samples of underwear, hosiery, and fabrics made of these yarns. Rep.: R. C. Thatcher F. R. Harris, J. S. Verlenden, R. J. Mathewson, M. A. Henderson, C. F. Smith, W. S. Lawson, J. P. Rickman, N. P. Murphy, J. O. Foil, E. R. Dillmore, Wm. M. Hall, R. B. Lewis.

**Synthane Corp.,** Oaks, Pa. Booth 167. Bakelite laminated products for textile mills. Rep.: J. K. Johnson, E. E. Smith.

**G. H. Tennant Co.,** Minneapolis, Minn. Booth 418. Equipment and supplies for treating and maintaining heavily trafficked floors. Rep.: Milton Aspden, A. H. Jackson, Patrick Manfra.

**Textile Age,** New York. Booths 84–85. Textile publishers.

**Textile Machine Works,** Reading, Pa. Booths 300–304, 325–329. Knitting machines and accessories. Rep.: N. E. Richards, R. W. Weaver, H. Printz, P. Kroener, E. A. Shoemaker, E. Kalbach.

**Textile Trimming & Boarding Machine Co., Inc.,** Reading, Pa. Booth 177. Loose-end trimming and examining equipment for hosiery. Rep.: F. Y. Kitzmiller.

**Textile World,** New York. Booths 114–117. Textile publishers.

**Textiles, Inc.,** Gastonia, N. C. Booth 385. Cotton yarns. Rep.: A. W. Latta, H. D. Skinner, L. F. Warren, A. A. Dinsmore, Jr., A. W. Latta, Jr., H. Gray Dolliver, J. T. Craig, S. G. Haigh, G. S. Johnston, Geo. T. Hutchinson, P. H. Thompson, W. T. Rankin, Jr.

**Tompkins Bros. Co.,** Syracuse, N. Y. Booths 404–405. Single-head, spring-needle knitting machine, featuring electrical yarn stop motion, needle stop motion, special brake mechanism, and furnishing wheels; multiple-feed latch needle machine, featuring visibility of operation of needles and sinkers, and automatic stop motion. Rep.: W. A. Ingalls, H. Fairchild.

**Torrington Co.,** Torrington, Conn. Booths 313–316. Complete line of latch- and spring-beard knitting-machine needles, sewing-machine needles, needle roller and ball bearings. Representatives from Torrington, Conn., Greensboro, N. C., Philadelphia, Chicago, St. Louis, Mo., New York, and Boston offices.

**Tubular Textile Machinery Corp.,** New York. Booths 65–66. Finishing machinery for knitted fabrics. Rep.: Jules G. Walter, Mortimer Cohn, Eugene Cohn, Joseph A. Guimond.

**E. W. Twitchell, Inc.,** Philadelphia. Booth 168. Hosiery and other textile packaging, featuring packages for Nylon hosiery, and expanded line of cellophane hosiery envelopes. Rep.: N. T. Gates, C. W. Middleton, R. H. Therrell.

**Underwear and Hosiery Review,** New York. Booths 69–72. Textile publishers.

**Underwear Institute,** New York. Booth 88. Institute headquarters.

**Union Special Machine Co.,** Chicago. Booths 305–306, 323–324, 330–331, 348, 349, 360–361, 386–387. Variety of machines for stitching, seaming, overedging, piecing, and other similar operations on hosiery and small garments made of knitted and woven fabrics. Rep.: G. A. Rundle, S. J. Story, W. E. Palm, Wm. Bleicher, W. E. LeRoy, E. E. Gratsch, C. L. Rosenquist, P. J. Steeper, N. V. Christensen, P. T. McLendon, W. J. Brauch, A. E. Brauch, C. S. Thompson, F. E. Hodtum, T. S. Whitsel, T. M. Murphey, A. J. Feigel.

**U. S. Gutta Percha Paint Co.,** Providence, R. I. Booth 251. Paint and enamel products for all painting jobs in knitting mills. Rep.: H. F. Eastwood,, J. F. Small, J. E. Connell, W. M. Moore, P. R. Gilmore.

**U. S. Ring Traveler Co.,** Providence, R. I. Booths 242–243. Various styles and sizes of ring travelers in both bronze and steel. Rep.: M. Lee Bolton, Herbert J. Smith. Torrence L. Maynard, Amos M. Bowen.

**United States Rubber Co., Lastex and Laton Yarn Div.,** New York. Booths 106–109. Lastex and Laton elastic yarns; also fabrics and garments containing these yarns. Rep.: Paul Linke, Wm. H. Barnhardt, J. Fodor, P. Kiernan, D. McNicol, J. Clausen.

**United States Testing Co., Inc.,** Hoboken, N. J. Booths 420, 422. Textile testing equipment and methods. Rep.: A. L. Brassell, S. B. Walker, A. J. Kellner, W. F. Morgan, H. M. Block.

**Universal Winding Co.,** Providence, R. I. Booths 148–153. New automatic bobbin winder; Roto-Coner for knitting cones, dyeing packages, etc.; new sizing machine for Nylon yarn; No. 50 Coner winding pineapple cones of Nylon and silk, and regular cones of rayon yarn. Rep.: R. Leeson, E. O. Smith, A. R. Breen, T. L. Cotter, R. L. Chisholm, W. J. Quinn, E. S. Broadbent, W. S. Warren, R. M. Mauldin, I. E. Wynne, J. W. Stribling.

**Valdese Mfg. Co.,** Valdese, N. C. Booth 358. Carded cotton yarns, natural, bleached, and dyed. Rep.: E. M. Spencer, L. P. Guigou, W. C. Brown, W. H. Smith, Tom Moore.

**Van Straaten & Havey, Inc.,** Philadelphia. Booth 431. Silk yarn for hosiery knitting. Rep.: Chas. F. Havey, C. Lee Havey, Murdock H. Smith, Thomas Y. Wilson, Marvin A. Briggs, Thomas R. Stretton.

**Victor Ring Traveler Co.,** Providence, R. I. Booth 208. Ring travelers. Rep.: E. R. Jerome, B. H. Waterman, J. A. Hall.

**Westinghouse Electric & Mfg. Co.,** Philadelphia, Pa Booths 61–62. Motor, control, and lighting equipment; Precipitron air cleaning equipment; Micarta products for textile mills. Rep.: J. W. Allison.

**Whitin Machine Works,** Whitinsville, Mass. Booths 142–147. High-speed warp knitting machine, Whitin-Schweiter automatic bobbin winder, fancy yarn twister. Rep.: J. Hugh Bolton, Harry Moss, Charles Sorton.

**Whiting-Patterson Co.,** Philadelphia. Booth 203. Plain and gravure printed cellophane envelopes for hosiery packing. Rep.: John R. Whiting, Fred Hinkle.

**William Whitman Co., Inc.,** New York. Booths 256–257. Worsted, Merino, cotton, spun rayon, and blend yarns. Rep.: M. G. Decatur, J. J. Devlin, M. H. Horschler, C. M. Jolly, H. C. Leswing, K. N. Merrill, J. K. Robinson, J. L. Stickney, W. C. Strugnell, J. E. Varney.

**Willcox & Gibbs Sewing Machine Co.,** New York. Booths 334–337, 372–373. New and improved sewing machines designed for use in the knit goods industry, featuring new automatically lubricated lockstitch machine. Rep.: G. M. Lewis, A. E. Selby, A. H. Weis, and others.

**Thos. Wolstenholme Sons & Co., Inc.,** Philadelphia. Booth 350. Worsted yarn. Rep.: L. F. Schaeffer, F. S. Krecker, L. F. Schaeffer, Jr.